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The Economic Aspect of Cost Accounts and Its Application to the Accounting of Industrial Companies *

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The subject of this paper is one of much importance to commerce and it is well that before this assembly of economists it should be considered first from its theoretical aspect: viz., the economic principles involved in determining the cost of any given article of manufacture. These principles are not so generally understood as they should be and experience tends to show that ignorance of them is one of the causes of excessive and detrimental competition. In discussing this subject it is necessary to refer to first principles which to some of you may appear elementary.

The term "manufacture" must here be used in its widest and most theoretical sense as including every operation necessary to convert a natural product to the use of mankind. In this sense it will be seen that it must also include transportation as an element which enters largely into the cost of all articles offered for sale even if it be only the conveyance of natural products from the garden into the house. In other words, manufacture is any operation which renders a natural product available for use and by so doing gives it a value based upon cost in excess of that which it had in its natural state.

The elements that enter into this process of manufacture as so defined are:

(1) The natural product itself, or Material;

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(2) The subsistence necessary for the labor or service employed in converting it to use in the place where it is required, or Labor;

(3) The period during which the natural product has to be used or the subsistence has to be provided until by the sale of the finished product an exchangeable value is obtained therefor, or Time.

In these elements nothing in the nature of profit is involved for the reason that it is represented by the difference between the actual cost of labor and the value which the combination of labor with material has given to the finished product, this being dependent on the demand for and supply of the particular article. The resultant value so fixed may at any moment be more or less than the cost of the primary element, and if it exceeds this cost there is a profit which is divisible among the three elements represented

(1) By the owner of the natural product whether it be the State or a private individual;

(2) By the individuals whose joint efforts have converted this natural product into the shape for which and to the place where the demand exists; i. e., Labor;

(3) By the owner of the accumulations which are used to provide for the subsistence of the owner of the natural product and of the labor during the period of manufacture, i. e., the Capitalist.

If, on the other hand, the selling value falls short of the cost the loss must fall upon the owner of the natural product and the Capitalist, Labor merely going without profit. The owner of the natural product is in fact also a Capitalist, so that for practical purposes the division of profit is between Capital and Labor only and the loss is borne entirely by capital which also in practice bears an additional loss because labor is usually able to obtain more than mere subsistence cost, i. e.—to obtain in advance a definite sum in lieu of its share of the prospective profit.

The continued conflict between Labor and Capital thus resolves itself into a fight between these two naturally opposed bodies for a more equitable division of the profit remaining over actual cost, each side as a rule honestly believing that the other is getting too large a share.

At first sight it may appear that this elementary description

loses sight of the important part which land, buildings, plant and machinery play in the process of manufacture. A little consideration will show that this is not so; but that these too fall naturally into the elements already given; each item involving the use of a natural product and its conversion by means of labor over a period of time necessitating the provision of subsistence by a Capitalist. For instance—the conversion of ore into manufactured steel involves the following operations:

(*a*) Natural products consumed, i. e., ore, coal, timber, etc.;

(*b*) Natural product used but not consumed, i. e., land upon which to carry on operations;

(*c*) Labor.

(1) Extracting ore in some very primitive way;

(2) Smelting this ore in some equally primitive way and with the use of fuel of some sort, both these processes being carried out as by savages with no provided facilities;

(3) The manufacture of some kind of tools by using the natural products so far developed and so gradually and over long periods of time constructing plants suitable for manufacture;

(4) The actual manufacture of the articles which are of use to the community and have an exchangeable value out of which profit can be realized.

A more detailed consideration of the three elements of Material, Labor and Time will serve to bring out the principles involved in their determination:

Materials are either mineral, vegetable or animal. Minerals are exhaustible and no methods are known of replacing them in any conceivable period of time. Vegetables, including principally timber, either perpetuate themselves or are capable of reproduction with the aid of labor in a reasonable period, subject to certain limitations as to soil and climate; while animals increase and perpetuate themselves in natural ways subject to natural laws and to the risk of extermination by other animals, particularly man.

Material cost consists in the first instance of the labor employed in obtaining possession of it in its natural state but the value is fixed from day to day by man's estimate of the prob-

able supply and demand and the difficulties and cost of making it available. The purchase price so fixed is in practice accepted as the cost although it necessarily involves profit to the original possessor and to subsequent owners through him who are able by virtue of the limitation in quantity available at any time to demand a sum down rather than wait for the uncertainties of future profit. The purchase price thus forms part of the cost and should be recouped on sale before any profit can be ascertained. Unfortunately in the case of many natural products, particularly of the vegetable kind, such as timber and agricultural products grown on virgin soil, one most important element of cost has been largely overlooked and that is the necessity of replacing or perpetuating the supply. In our own country we have evidences of this fact always before us in the wasteful destruction of splendid forests with little or no attempt at replanting and in the worked out soils on the western prairies where crops have been grown for a generation by extracting all the natural wealth of the soil and leaving behind exhausted land. The same process has gone on in other countries from the most ancient times and a warning against a continuance of the present conditions may be found in the dry, waterless plains in northern Africa which have resulted from the wholesale consumption and destruction of timber by the Romans and their successors. In most European countries, as well as in India, this waste has been largely remedied by careful and systematic preservation of natural resources, and the Federal Government here has shown in recent years that it is alive to the vital importance of the conservation of natural resources of all kinds.

Labor is a direct element of cost which involves the provision of at least subsistence to those who perform it. The agitation in some countries for the payment of what is known as the "living wage" would seem to imply that all labor does not receive such subsistence. This, however, is really a question of the degree of comfort involved in the term subsistence and of the relative habits and customs of different classes of workers in different countries. Whether this standard should be higher or lower is not a question for economists but for social reformers and it is sufficient here to note that the cost of labor, while theoretically limited to bare cost of subsistence, varies in fact, by reason of the supply of or the demand for labor of different classes, from

the bare cost of living to a very comfortable sum in excess of that cost permitting the workers to accumulate considerable savings. In effect, then, whatever share of ultimate profits the workers might eventually receive is in the majority of cases compounded for by a payment in advance, leaving the entire surplus profits to accrue for the benefit of Capital which on the other hand also has to suffer the loss if any. This exclusion of labor from all share in the ultimate profits in defiance of economic justice is no doubt a fundamental cause of the continued warfare between Labor and Capital and a remedy would seem to lie in the direction of a return to the elementary principles of profit-sharing, always having due regard to the fact that while Capital may suffer a total loss Labor at any rate is sure of its subsistence. Profit-sharing schemes, under which Labor can obtain a reasonable share of the ultimate residue, if any, and will thus suffer in a measure if there is no such residue, are now in operation in many important industries, and in the extension of such schemes undoubtedly lies great hope of a steady improvement in the relations between Capital and Labor.

The element of Time enters into costs in the shape of a return to the Capitalist for the use of his accumulated savings, represented either by natural products for temporary use, such as land, or by natural products for consumption, such as material or subsistence. The latter, being consumed, is an element of cost; the former remaining unchanged is not; and the consideration given to the Capitalist for permitting his accumulated savings to be temporarily used or consumed is a share of the ultimate profit or interest. This is not theoretically therefore an element of cost though in practice the demand for capital like the demand for labor is such that the Capitalist is frequently able to stipulate for a fixed immediate return for the use of his accumulations thereby, as in the case of labor compounding for his share of the ultimate profit and throwing the whole risk of profit or loss upon the borrower. To this extent interest in such cases might perhaps be considered as an element of cost although it seems better not only theoretically but as a matter of practice and business expediency to treat it as a division of profits. When the capitalist is himself the manufacturer, no such condition exists and interest cannot in such cases be treated in any way except as a division of the ultimate profit if any profit results.

In the first outline of the theoretical elements of cost all profit of any kind was excluded; enough has now been said to show that this theoretical condition is impossible in practice and that in every day affairs those who contribute to production whether as owners of natural products, as laborers, or as capitalists frequently compound by the receipt of a fixed sum for their share of the profit and so relieve themselves of any possibility of loss, leaving the entire ultimate profit or loss to be borne by one or more individuals among the many contributors. The amounts so paid by way of composition for these shares of profits thus come to form a part of the cost to those who continue to take the risk; and it follows therefore that the commercial cost of two identical articles, the absolute or theoretical cost of which would be identical, may be widely different because of the different conditions under which the processes of manufacture have taken place. As an instance, consider a piece of complicated machinery made entirely of steel or iron. The following possible conditions of manufacture may exist:

(1) The manufacturer may own his own iron, coal and other mines and may at his own factories produce everything up to the finished product. In this case his costs will include no profit except that accruing to labor;

(2) He may purchase all his natural products but carry on all manufacturing himself at his own factories. In this case his costs will include the profits of the owner of the natural products as well as those of labor;

(3) He may purchase from other manufacturers the whole or a portion of the parts that enter into his finished machines. In this case his costs will include not only the profits accruing to labor and to the natural products but also the profits of any number of other manufacturers who have preferred to limit their risk at a certain point of the manufacturing process leaving to the final manufacturer of the complete finished product the whole of the ultimate profit or loss.

It is easily seen that in the first case the manufacturer's costs will be very much lower and his profits very much higher than

in the other two; and on the other hand, that he is taking much greater risks not only by reason of the longer time involved in the manufacture and the consequent greater chance of eventual fluctuations in demand and supply but also because he has compounded with a great many more intermediaries for their share of an ultimate profit which may never be realized. A practical illustration of these conditions may be found in a comparison of the United States Steel Corporation which owns its own ore and other mines and converts their material into finished buildings and plants and a contracting company which buys all its finished material and itself only erects the building or plant.

Turning now from the economic to the commercial aspect of cost accounts some further elaboration of the primary principles laid down becomes necessary.

The elements involved have been shown to be natural products or material, subsistence or labor and time (or interest), but in practice these elements are seldom found in this simple form. Natural products, as already shown, are combined with other elements with the addition of profit either to form the primary material for some other manufacturing business or to form the instruments used in the processes of manufacture whether buildings, machinery or equipment. The result of these more complicated groupings is that the principle headings under which commercial cost accounts fall are generally somewhat as follows:

Material:

(1) That to which manufacturing processes are applied to convert them into some different form;

(2) That which is used or consumed in the processes of manufacture:

(*a*) Directly;

(*b*) Indirectly.

Labor:

(1) That employed directly in and upon the materials under process of conversion;

(2) That employed indirectly in operations necessary for the manufacture but not a part of it such as upon repairs to and up-keep of machinery, buildings or equipment.

Expenses:

Consisting partly of material and partly of labor which are incidental to the carrying on of a manufacturing business, but have not any direct relation to the process of manufacturing.

Wear and Tear:

Or the gradual consumption of the buildings, machinery or equipment employed in the manufacturing process; more commonly known as depreciation.

Now the object of any system of cost accounts being to ascertain the cost of manufacture of each article or class of articles it is at once evident that in a factory producing many different classes of product some method must be adopted for distributing many of the items of cost over the different classes.

Material in process of direct conversion and labor directly employed in such conversion present no difficulties being easily chargeable to the process and the same is true of auxiliary material consumed in the process or of auxiliary labor which can be segregated at the moment.

There is, however, a large class of items, such as rent (where payable), power, light and heat, salaries of general staff of clerks and superintendents; wear and tear and many others which cannot be distributed exactly and yet are a necessary and integral part of the cost of manufacture. These items consisting of part of the items of material, of labor and the whole of the items of expense and wear and tear are usually grouped under the term, "overhead expense" or "burden" and distributed on a more or less arbitrary basis between the different products. This distribution involves most difficult questions and the adoption of an erroneous method may easily appear to show that certain articles are manufactured at a cost well below their selling price while a more accurate distribution would show a reverse condition. The most usual method of distribution is by a straight percentage on the direct labor cost and where all products are of the same nature this may give fairly accurate results; but it is not scientific. On the other hand, a more elaborate system of distribution based on an exhaustive examination of processes with a view to determining what share each operation should bear of each class of overhead expense and requiring an elaborate analysis thereof may involve so much expense as to be prohibi-

tive and the final result may be found not to differ materially from the more simple and ready method of a percentage division.

Modern factories are usually operated by departments between each of which there is a well marked division. Each department within its own limits occupies a certain floor space, involving light and heat proportionate thereto; uses an amount of power which can be estimated within reasonable limits; and has certain labor and other costs for general assistance, cleaning, stores, and superintendence which belong entirely to its operations in total. All these can be charged to the department and serve to determine the burden of that department. Some items such as rent (if any), insurance, heating and light may be charged to the department on the basis of floor space, others such as steam or electric power on the basis of horse power hours worked; others again, such as general labor, on the basis of the direct labor pay-roll and others, such as superintendence and general expenses on the basis of labor and material costs combined. This main division is a comparatively simple one although the circumstances of each case require careful study in order to determine the most nearly correct method; and if the industry is such that each department is carrying out only one class of operation, easily measured on some unit basis, the division of this burden over unit costs presents few difficulties. It is in cases where the operations in a department are of a varied and complicated nature such for instance as a large machine shop, that almost insuperable difficulties arise and it may well be doubted whether any really accurate distribution is possible.

In considering the item of overhead expense it is necessary to emphasize the distinction which must be made between expenses necessary for the production of manufactured articles in a form in which they are ready for sale and the expenses incurred in offering them for sale to the public and in carrying through the sales when made. The former item as has already been shown is an essential element of cost of manufacture; the latter is an essential element of cost only from the point of view that without such expense the products could not be sold and the profits could not be earned. Strictly speaking, therefore, these selling expenses should be deducted from the price ultimately obtained for the product and the difference only should be con-

sidered as the amount realized for the manufactured article. In practice this same result is often achieved in a different way by distinguishing between manufacturing cost and selling cost, manufacturing cost alone being employed for the purpose of valuing the product which remains on hand unsold at the time of taking an annual inventory and selling cost being dealt with only in memorandum form in order that those engaged in selling the products may know the limit below which they should not be disposed of.

The necessity for accurate cost-keeping by commercial enterprises lies in the fact that without such cost-keeping, whether it be of a highly scientific nature or merely by rule of thumb, it is impossible for a manufacturer to know whether the price at which he decides to sell his articles will or will not yield a profit. The objection to rule of thumb methods is that they are generally quite inaccurate except in cases where manufacturing processes are relatively simple. In the most usual cases where the process of manufacture is divided over a number of separate departments each representing a different set of operations any such methods can only lead to serious errors and frequently to ultimate loss.

It is necessary here to note that while the ascertainment of accurate costs is essential, it does not necessarily follow that no profit can be realized by selling at a price which appears to be below such cost. In any factory equipped for a certain volume of production the overhead charges will remain practically stationary whether the factory be operated to its full extent or to only a small proportion thereof. It will follow therefore that the unit cost of manufacture, including overhead expense, will be much higher when the factory is partly operated than when it is fully operated and consequently a manufacturer can earn profits for himself by selling a considerable portion of his output at a small price over and above the direct cost excluding overhead expense, thereby reducing his unit costs and making more profit than he would have done on the smaller output. It is, however, safe to say that it would be dangerous to attempt to carry out any such procedure without an accurate knowledge of direct, overhead and selling costs.

In the limits of this paper it is hardly possible to do more than supply this outline of the general practice of commercial cost-

keeping but there are important questions as to the treatment of certain items which may be here considered.

Accountants frequently have to give opinions as to the propriety of including rent and interests in costs. In theory these two items are identical, rent being the sum paid to a Capitalist for the use of land or buildings and interest being his compensation for placing his natural product or his accumulated savings at the disposal of the manufacturer. Both items are therefore in the nature of a division of profits out of which alone they can be met and they should therefore strictly be excluded from costs. In practice, however, the effect of the laws of supply and demand is such that the Capitalist is frequently able as has been shown to compound with another Capitalist for his share of profits and to obtain instead a fixed payment independent of what ultimate profits may be. This fact hardly seems, however, to justify the treatment of these items as cost but rather that they should be treated as an advance by one Capitalist to another of a proportion of the profits which the former expects to realize, this proportion being accepted in full settlement of a fluctuating and doubtful future sum. This principle is recognized in the form in which railroad accounts are now prepared where both rentals of leased lines and interest on borrowed money of all kinds are treated as a division of the income from operations after the same has been ascertained, i. e.—as a distribution of profits.

In the case of manufacturing companies no such clear recognition of this principle is found and rent for factories, etc., where paid is always treated as an item of manufacturing cost or expense, while interest, an exactly similar item, is more usually treated as a charge against or division of profits. This method of charging rent as an expense has led to a claim that it is properly so treated and that therefore when a manufacturer owns his own premises and pays no rent an estimated amount corresponding to the value of the use should be charged into and considered as part of the cost thereof. This sounds plausible but it is believed that a nearer approach to theoretical accuracy is to be found in the railroad practice of considering all rentals at least when there is a natural division between rent and other service as a charge against or division of profits.

If two manufacturers have identical facilities for manufacturing the same article and adopt the same methods and at the same

expense it is certainly not reasonable to say that the manufacturing cost of the one who rents his facilities instead of owning them is higher than that of the other who owns them; but it is reasonable and correct to say that the former, who has a smaller personal investment, is sharing his profits with the Capitalist who contributes the facilities.

Similarly in the case of interest the manner in which capital is provided cannot affect cost of manufacture. A manufacturer may provide all his own capital or he may obtain some part of it from other capitalists who either take equal risks with himself or prefer in some way to limit their risk. The profit when ascertained has to be divided between the different Capitalists according to the terms agreed upon but no part of it should be an element of cost nor should the method of its division be a factor in determining selling price.

This question of rent serves to show the difficulty if not impossibility in practice of laying down any hard and fast rules based upon economic principles which are to so great an extent theoretical. Rent has so far been considered only as relating to the provision of manufacturing facilities, land, etc.; but an industry exists in which Capitalists erect buildings and let them out in whole or in part to others for offices, residences and other purposes incident and necessary to business enterprise of all kinds. Rent of a factory is clearly a distribution of profit but it is difficult in practice to make the same claim for office rents and yet the arguments seem almost identical. A general distinction may perhaps be made between rent paid for the use of premises which form a direct and integral part of the manufacturing operations and that paid for premises which are merely incidental thereto; and a further distinction lies in the frequent inclusion in rent of the price for other services such as light, heat, elevator service, cleaning, depreciation, etc., all of which involve labor and profit just as these items are involved in the purchase of material. No general rule can be laid down beyond suggesting that wherever an item of rent appears to consist mainly of a direct division of profit it should be so treated and only considered as part of cost when it seems to be mainly a composite item of labor, material and profit representing service rendered.

Some confusion in relation to these two items of rent and

interest is found in the relation of the profits of a corporation or an individual to the profits of the business which is carried on. The latter should be identical under the same conditions of manufacture whatever the financial arrangements may be, but the former is affected materially by the share of such profits that are distributed to others in the shape of rent and interest as well as in commission or other payments dependent in any way upon profits. The claim is frequently made that in ascertaining the cost of a product all these factors should be taken into consideration but this it is believed is a fallacious argument based on a mistaken idea of what constitutes profit in the abstract as distinct from its division among the ultimate owners or stockholders. The point is an important one in so far as it may affect selling price and reasonable profit; for it certainly would not be reasonable that a manufacturer who had by hiring his factory, raising loans, sharing profits with his employees and such kindred operations distributed a considerable portion of his profits should then raise his prices to an amount in excess of his neighbor's who had decided to provide all his own facilities and not to share his profits with anybody.

The question is frequently raised whether distribution of profits made to employees under profit-sharing schemes, or contributions to pension funds, are proper items to include as part of manufacturing costs. This question must be answered in the negative. Labor has already received its subsistence and this is properly included as cost; any further distribution to labor whether by way of a share of profit or a provision for old age or sickness represents the share of labor in the profit. It must sooner or later be recognized by manufacturers that such distributions of profit to labor can only be made out of the share of profit that goes to Capital and ought not to be met by increasing the selling price to the community unless it should appear that on general grounds the total remuneration in the way of profit to labor and capital combined is unreasonably small.

One of the important purposes served by accurate costs is to enable a manufacturer to ascertain his profits when a considerable part of his product remains unsold. Profits can only be made out of the sale of the article manufactured and such a factor as a general rise in prices of material and labor after the completion of manufacture but before sale cannot constitute

profit. Hence in ascertaining profit at any time it is essential that what is not sold should be carried over at exact cost, this cost being manufacturing cost in the condition in which the products actually are. It may also happen that products sold in advance have not been completely manufactured and cannot therefore be delivered; in the latter case the cost of manufacture so far as completed and the cost of sale together represent the amount expended on the product; and provided there is every prospect that the total cost when completed will be below the selling price after deducting cost of sale this is the amount to carry forward. There are, however, products which must be kept for a certain time before they can either be submitted to further manufacturing processes or sold; in such cases it is customary to take up as part of the cost of the products on hand a reasonable interest on the manufacturing cost for the period for which the products may have to be so held in stock. This is an exception to the established rule, based not only on economic theory but on sound practice, that interest is not part of cost and it is in effect taking up part of the ultimate estimated profit before it is earned; although if this addition be limited to so much of the interest as has actually accrued to lenders of capital there may be no anticipation of the profits of the corporation or individual manufacturer.

Contracts are frequently entered into on the terms that the price is to be fixed at actual cost plus a percentage thereon and disputes sometimes arise as to what constitutes cost. These disputes are almost always due to carelessly drawn contracts the parties thereto and their legal advisers frequently having a very loose idea of the principles involved. The importance of a clearly drawn contract is evident in view of the conflicting views on such subjects as rent, interest, bonuses and commissions to employees, and many other similar items and if a proper form of contract exists no dispute is likely to arise. In the contrary case, however, the elementary principles of costs may be relied upon to solve the difficulty. If a manufacturer enters into such a contract it must be assumed that he has all the facilities necessary for carrying it out and that no charge for the use of those facilities other than actual wear and tear thereof in the course of carrying out the contract can be allowed as an item of cost. Similarly no charge can be allowed for rent or interest or other

items which according to the theory laid down represent a share of profits on the operations. It is on these items that disputes generally arise rather than on the more complicated questions of proper distribution of burden upon which manufacturers and contractors are usually much better informed.

During the last decade competition and the increased demands of labor have materially increased manufacturing costs and manufacturers have recouped themselves by raising prices to the consumer. Having reached the limit in this rise which the consumer will endure they are now leading a general attack upon the railroads of the country alleging that the latter who have up to the present endeavored to meet higher prices and higher labor by the introduction of economies and without any material increase in rates should be prohibited from now raising these rates to a point which will enable them to maintain the extremely reasonable return so far yielded upon their investments. A comparison between the cost and selling price of manufacturers and of transportation respectively may show that if unreasonable profits are being made it is not by the railroads but by the manufacturers and full inquiry may well result in establishing that the extra share of profits now given to Labor under profit-sharing and pension schemes has not been met by the manufacturer by a reduction in his possibly unreasonable share of the profits as it should have been but by an increase in prices to the consumer. No investigation into the railroad rate question can be considered complete which does not take into consideration the margin between cost and selling price not only in transportation but in all manufacturing concerns. No such investigation can be properly undertaken without a sound understanding of the principles and elements that are involved and it is hoped that the inadequate attempt here made to set forth some of these principles and their practical application may lead to a discussion which will be of material value as a contribution to the important question which is now agitating the country.

Municipal Accounting

By Charles F. Gettemy

Director of the Massachusetts Bureau of Statistics

I am interested in the subject of municipal accounting officially from the statistical standpoint, and am very glad to be able to tell you something of what we are trying to do in Massachusetts in the way of systematizing municipal accounts for statistical purposes, because that is the point of view from which the Bureau of Statistics is approaching the subject, and not primarily from the point of view of introducing systems of accounts *per se*.

You are, of course, familiar, in a general way, with the history of the movement for municipal accounting reform, which had its incipiency about sixteen or seventeen years ago, I believe, with the National Municipal League, which started a campaign for uniform systems of municipal accounting. This has been taken up, as you know, by the Bureau of Census at Washington, which has set the pace in the matter of establishing standard classifications and endeavoring to have them adopted by the municipalities of the country. You know, also, that the state of Ohio was the pioneer in the matter of state supervision of municipal accounts, to the extent that the legislature of that state passed a very comprehensive act, providing for the establishment of a Bureau, in the State Auditor's department, the duty of which should be to install accounting systems in the cities, towns, and counties of Ohio, with periodical audits of their accounts by this state department. Since that time various other states have followed in that line, and have passed laws more or less comprehensive—I believe the state which has passed the act most nearly analogous to that of Ohio—practically the same act—is Indiana.

In Massachusetts the question of attempting to reform municipal accounting systems had its origin in a movement with which I believe Mr. Chase was identified at the start, and I am under the impression that Mr. Chase and his colleagues at that time undertook to convince the Massachusetts legislature that legislation somewhat similar to that which was subsequently passed in Ohio should be adopted in Massachusetts. But we in Massachusetts are very strongly devoted to the theory and spirit

of local self-government, and a great many people are obsessed by that theory to the extent that they look at things solely from the standpoint of local government; and the legislature of Massachusetts, composed as it is of representatives from all the cities and most of the towns of the state, simply could not be prevailed upon to pass a bill, the ostensible purpose of which was to bring about a centralized state supervision of municipal accounts, the cities and towns feeling that they were capable of looking after these things themselves. All that could be done, therefore, was to induce the legislature to pass a bill, which appeared to be innocuous, but which was regarded by the fathers of the movement as an entering wedge, and such it has proved to be. This opening wedge had a very thin edge—almost a razor edge. It provided, instead of undertaking to establish uniform accounting methods in the cities and towns of Massachusetts, that the Bureau of Statistics should send to the accounting officers of all of the cities and towns of the Commonwealth uniform schedules, on which they were to make returns of their financial transactions.

For this work the legislature appropriated the sum of two thousand dollars ($2,000), to employ a clerk to do this work—that was the designation, a "clerk," not even an accountant, let alone a certified public accountant—with, of course, a small sum of money for trifling expenses, postage, etc. With this appropriation the Bureau hobbled along as best it could; undertook to devise schedules and send them out to the best of its ability, as the law said, to the "accounting officer" of the cities and towns. But it is often like looking for a needle in a haystack to find the "accounting officer" in the cities and towns of Massachusetts, because you never know who he is; you can send a schedule to the town treasurer, but you will find that he seldom keeps all the town accounts; sometimes the books are kept by the Chairman of the Board of Selectmen, sometimes by the clerk, and so on down the line. But our schedule was sent to somebody, and in most cases something of an effort was made to fill it out. But you must bear in mind that to fill a schedule involves the digging out by the man who does it from his own accounts of the desired data, item by item, and transferring them to the proper places on the schedule; he must endeavor to put himself in our place and make certain that his definitions agree with ours, and that he is putting on the right line in the schedule

the item that we want him to put there, instead of putting it somewhere else. We have endeavored to help him to some extent by getting out a pamphlet describing our classifications in great detail, and the schedule itself is accompanied by a list of items covering approximately about everything that cities or towns spend money for, the precise line on the schedule where expenditures for each purpose should be placed being indicated.

But we have no power, no absolute power, to install accounting systems. It is wholly a voluntary process, beyond the fact that the cities and towns are required to answer in these schedules to us, the questions asked. Of course, some of them ignore the law altogether—it carries no penalty—others endeavor to fill the schedule, but do so in such a defective manner that it is impossible to use the returns without going through them and spending a great deal of time upon them, and then sending an accountant to the town to examine the books at close range. We now have in the Bureau some four or five expert accountants, who are not only expert accountants, but expert municipal accountants—which is a very different thing—and we have trained six or seven women clerks for this work. Every city and town in Massachusetts, down to the smallest town, under the law, has to have a printed report, and we have a certain advantage in that, although many of these town reports are of very doubtful value. We sometimes find that their footings don't balance, and our clerks have spent many days and days in laboriously going over the printed figures, trying to verify items and correct footings which are wrong.

When the schedules come into our office, we put them in the hands of clerks, who endeavor to check them up with the local printed report, and when they have got as far as they can, they draw up a number of inquiries and notes, which are turned over to a man who is an expert in classifications, who goes through them for the clerks; he then has a list remaining which can only be answered by sending a special agent, who is an accountant, to the city or town to go over the books in person, and extract the information desired. For that reason we are just able to bring out this autumn our second annual report on the subject, which has been two years in preparation, and covers the financial year 1907. Some day, with better accounting methods and a larger office staff, I hope we shall get caught up.

The result of this work has been, I am glad to say, to stimu-

late and arouse a great deal of interest in the cities and towns of Massachusetts, in their accounting methods, and in numerous cases the local officials have appealed to us, and have said: "We can't fill out your schedules without changing our bookkeeping methods, and we would like to do so, but there isn't anybody in town who can do it. Can't you send some one from your office, and we will be glad to pay the expense?" But the law was not such as enabled the Bureau to do such work, and receive compensation for it. The legislature, however, in 1910 passed an act, upon my recommendation, which authorized cities and towns to petition the Bureau of Statistics to audit their accounts and to install accounting systems, the cost to be assessed back on the municipality.

Our last legislature also passed another act, which is the only act which involves any real compulsory supervision by the Bureau over local finances—a law which requires that notes issued by towns, after the first of January, 1911, must be certified by the Director of the Bureau of Statistics. I think that this is the first piece of legislation of that sort to be passed for the accomplishment of such a purpose in any American state. Like most legislation intended to accomplish good, it was brought about only after very serious damage had been done. In the town of Framingham, a town of about twelve thousand inhabitants, the "faithful, tried and true" town treasurer, who had held that office for many years, and had the respect and regard of the entire community, turned out to be a defaulter to the extent of some three hundred and fifty thousand dollars ($350,000), through the forgery of town notes. The law requires that town notes be signed by the town treasurer and countersigned by the Board of Selectmen; but this town treasurer had gotten under the influence of sharpers in the money market, and he was led to issue town notes and forge the names of the selectmen to them. One of these notes came due sometime last October and when it was not paid, the disclosure came. The treasurer is now in state prison.

That unfortunate episode called attention to the fact that there was no adequate safeguard in our towns in regard to the issuing of these obligations. The Governor of the Commonwealth thereupon recommended legislation, with the result that the legislature passed a bill requiring town notes to be certified by the Director of the Bureau of Statistics. The result of this

requirement may be to limit the issue of town notes in the future to tax notes—that is, notes issued in anticipation of taxes, and that will result in the towns issuing bonds for their other expenses. At the present time, towns issue notes for highway, school, and other purposes, and they also issue serial notes instead of bonds. The legislation involves the furnishing of books of note forms by the Bureau of Statistics to all town treasurers, and hereafter, when issuing notes, the treasurer must use one of these forms. There are three hundred and twenty-one towns in Massachusetts, and we shall send a book to each town, containing a certain number of notes serially numbered and attached to a stub, upon which the town treasurer must keep a record of each note, stating the amount of the note, when it is issued, where it is payable, date of payment, the amount of interest, whether discounted, etc. The signatures of the selectmen to the note are required, and the town clerk must furnish the Bureau with a certificate to the effect that they were signed in his presence, and that the persons purporting to be the treasurer and the selectmen were duly elected and qualified to act as such. When the note comes to the Bureau, we shall send to each of the signers an identification certificate, and he will be required to certify that he did sign that particular note. These certificates, being returned in proper form, will be my evidence of the genuineness of the signature. The note, when certified, will be returned to the town treasurer by registered mail.

I said at the outset that we approached this subject from a statistical standpoint. I find that public accountants who are unquestionably able to audit properly the accounts of a municipality are apt to stop there; they are like a great many municipal auditors who are lacking in a sense of imagination, which, if they possessed, would lead them to go beyond their journals and cash books and ledgers, and look at things from the standpoint of the people who pay the taxes. The installation of proper accounting systems in our municipalities is, from my point of view, a means to an end. We are endeavoring to lay emphasis on uniformity of definitions and classifications of accounts, so that we can get comparable statistics and so that our auditors' reports can be presented to the people in a form which will mean something. Now, we have reports that show the financial transactions of the city or town in a certain sense, and they give list

after list of names of persons to whom money is paid, but they don't show for what purpose the money is paid; there is no proper classification, and the public too often can't get sufficient information from them to determine the cost of municipal service.

Now, a municipality may make—as a good many of our Massachusetts towns do and I think probably a few cities—a blanket appropriation for salaries, and out of that appropriation are to be paid all the salaries, from that of the mayor to the janitor of the schoolhouse; and an auditor, of course, may audit the accounts and find that no money is paid from that appropriation which ought not to have been paid from it, that all money in that appropriation was paid for salaries and nothing else, that the books balance, and no money has been stolen, and he will give a certificate of competency and honesty to the treasurer. But we want auditors who will be able to make up, and insist on the cities making up, budgets in classified form; we want to do away with salary accounts, and as far as possible with contingent accounts—they are apt to be delusions and snares—and have the figures presented in classified form; in a form which will mean something to the citizens and taxpayers.

We are hoping the time will come when accounts will be kept on a uniform system of classification, so that we shall know for what purpose the city's money is spent and we shall be able then to arrange statistical tables which will show year by year whether the city is spending more or less for its schools, its health department, its fire department, etc., than it spent the preceding year, or more or less than cities of similar size and condition are spending. In the course of time, when we get these fundamental questions settled, we hope to be able to establish some unit of measurement in municipal service. The most common method of making comparisons of municipal expenditures, debt, etc., is to use a per capita basis—I think that alone is apt to be very misleading, and I am very doubtful whether, in many cases, comparison should not be made on the basis of valuation, and in other cases on density of population. In the course of time, when we can get municipal statistics on a uniform basis, we may be able to work out a system of index numbers, so to speak, for measuring municipal service.

Cost Accounting

By John R. Wildman, M.C.S., C.P.A.

Part V

CHAPTER X

When Departmental Distribution of Overhead is Indicated

Since the time when Adam Smith advanced and substantiated the theory that a division of labor increases production, the tendency on the part of the manufacturer toward a highly developed physical organization has been constantly increasing. Manufacturers have learned that by segregating and controlling their materials and supplies and dividing the operatives into departmental groups, increased production and greater efficiency results. Arranging the departments so that the course of the product is ever forward, results in a great saving of time and a corresponding increase in the amount of work of which the organization is capable. In the more modern plants special attention has been given to the physical arrangement of the various departments. The stores department where the incoming material is received is located as near as possible, not only to the department where the first operation of labor is performed, but to the means of transportation, whereby the material is delivered. The course of work is constantly forward, never doubling back or going twice over the same route, and finally reaching the shipping department which is located adjacent to the shipping facilities. The effect which such an organization has upon the elements of cost is decidedly simple except in the case of overhead. The materials and supplies present no particular problem, since in no matter which type system is involved, they emanate either from the main stores, or what might be termed branches of the main stores located in the departments and known as department stores. The direct labor originates in the various departments and causes no particular trouble in its handling. The treatment of the overhead is the problem which is hardest to deal with. While the statement has been made heretofore that it was inadvisable in the simple type of system to distribute the overhead to departments, and subsequently apply it to the product, it must be borne in mind that

in the compound and complex type the situation is entirely different. These types frequently have to provide for complex and diversified product, and in such instances a departmental distribution of the overhead is not only desirable for a statistical purpose, but absolutely necessary in order to obtain results which most nearly approach correctness.

In the case of diversified product certain units go through all departments, certain units go through a part only of the departments, and in either instance certain units may go into departments where the overhead varies from heavy to light. It would be manifestly unfair to charge the product with overhead of departments through which it has not passed, or to burden product going through departments where the overhead is light with the overhead of departments wherein it is heavy. Where a variation of the overhead exists it is unquestionably more correct to localize and apply it to the product at points of contact. The justice of so doing is shown by the following illustrations wherein the local and general methods are compared:

	Departments			
	Total	A	B	C
Light	$24.00	$10.00	$8.00	$6.00
Job No. 1	34 hours	8 hours	16 hours	10 hours
" " 2	11 "	2 "	4 "	5 "
	45 hours	10 hours	20 hours	15 hours

Departmental Distribution

	Job No. 1	Job No. 2
A	$8.00	$2.00
B	6.40	1.60
C	4.00	2.00
	$18.40	$5.60

General Distribution	No. 1	No. 2
A.....		
B.....		
C.....		
	$18.13	$5.87
	45)$24.00	.5333
	.5333	
	34	11
	21332	5333
	15999	5533
	$18.1322	$5.8663

In the above tabulation "light" is the item which has been selected for distribution. The total cost of the light for the period was $24, used in the various departments, designated A, B, C as indicated. It is assumed that job No. 1 was 34 hours, and job No. 2, 11 hours in going through the three departments as indicated in the tabulation. By distributing the overhead to the respective jobs from departments, it is apparent that job No. 1 would bear $18.40 and job No. 2, $5.60; as against the respective amounts $18.13 and $5.87, were the overhead to be apportioned on the basis of total hours without regard to the amount of time spent in the respective departments.

It has been previously stated that one of the principal objects of departmental distribution was to secure statistical information. Such information is needed for administrative purposes and affords an opportunity for comparison which is invaluable. It may be made to serve as an index to efficiency. By distributing to the centers of production, such as departments, processes, or men, the items of expense or cost affecting such centers, and redistributing in turn to the units of product undergoing process the expense or cost thus connected, the establishment of a rate or amount per unit is made possible, which furnishes a ready means of comparison and indicates the capability of the operating center involved.

In like manner items of cost may be grouped around machines so as to produce similar results. The obtaining of rates has the effect of creating standards, while perhaps not standards

in the scientific sense, at least temporary standards which measure capacity and ability for work and answer that purpose until replaced. In this way they serve as an index to efficiency. Through the means of such statistics it may become evident that the increased cost of a certain process is due to the idle time or inefficiency on the part of the operatives. This may have occurred on account of a falling off in the amount of work. Some fault in the method of distributing work, or delay on the part of the foreman in so doing. Proper statistics can be made to indicate such conditions promptly, thus paving the way to the application of remedies. Such remedies may be brought about, first, on the part of the foreman, by laying off a part of the force, or improving the method of distributing work; second, on the part of the superintendent in causing the foreman to become more efficient, either through the aid of advice, or such other measures as may suggest themselves in view of the circumstances surrounding the case.

CHAPTER XI

Defective Goods and Idle Time

In order to accomplish a full discussion of the subject of departmental distribution it will be necessary to consider two of the elements of cost, namely, materials and direct labor, in certain special phases which they present. These are defective goods and idle time. The question with regard to material here is, the way in which defective work shall be handled. In this respect any remarks must be qualified as has frequently been necessary, by stating that the ways of treating defective work depend upon the line of production.

There are three methods commonly used. The first is to divide the cost of the job or lot by the number of perfect units, thereby burying in the cost of the perfect units the cost of the defective work. The second way is to divide the cost of the entire lot or job by the number of the perfect units, after deducting the cost or scrap value of the defective work. The third way is to set up the defective work at its actual cost and carry it through as defective work, adding to the first cost any subsequent cost applicable thereto. As an illustration of the

first methods, assuming the cost of producing 100 perfect units to be $500—it is evident that if only 98 perfect units result the cost will be $5.10 per unit. In the case of the second method, the cost will be $5.06, if it is assumed that $4, being the scrap value of the imperfect units, has been deducted from the cost of the lot, and the balance of $496 divided by 98 perfect units. In the case of the third method, the cost per unit will be $5, 98 being perfect and 2 imperfect. The second method is probably the most common. One of the collaborators on "a uniform method of cost-finding for steel foundries," has, in effect, this to say on the subject:

"Defective costings fall naturally into two divisions. First, those discarded at the foundry as imperfect, and second, those returned by customers. The reason for discard at the foundry may be either on account of construction, due to the complication of pattern or thinness of section, or imperfect practice. In such cases the job should be charged with the material, and labor credited with metal at scrap value, and the balance divided by the number of good castings. As a prevention against the return of defective castings by customers, the cost should be loaded with an arbitrary percentage based on the cost less the scrap value which should be credited to the proper reserve."

In the manufacture of hats, for example, the third method, while perhaps not most commonly used, is the most scientific. Defective hats are known as "knock-downs." The cost of "knock-downs" is of considerable importance. The question presented is, whether or not it pays to finish up for sale, hats which are imperfect when formed. Is it good practice to load the cost of "knock-downs" up to the point of "stock bodies," on perfect hats, and finish up for sale a hat, the proceeds from the sale of which, is considered as so much "velvet?" As a result of such practice "knock-downs" might very easily be sold at a considerable loss, whereas, if the proper information were available, the superintendent would be enabled to decide whether or not imperfect bodies might be profitably completed.

Labor needs no distribution to departments, since it arises there. The question with regard to labor is, what shall be done with the idle time? Theoretically speaking, idle time becomes in effect a supplementary labor cost, which, in practice, should be distributed over the jobs in process, in proportion to the time

actually expended on each job. The subject of "idle time" will be treated more at length under "machine rates."

CHAPTER XII

Distributable Overhead and the Bases of Distribution

In making the distribution of such overhead as permits of distribution to the various departments, care should be taken that only such overhead be distributed to the respective departments as distinctly applies to them. Such overhead as applies must be analyzed and some consideration given to the departments as to their physical characteristics, the capacity of their contents, and frequently the value of same. In this connection there must be considered the floor space, cubic contents, value of the machinery and the horse-power of same.

It is probable that before proceeding to the discussion of the items to be distributed some thought should be given to certain of these items as to the economic and other theories concerning them. Reference is made especially to rent, taxes, insurance, and interest on capital invested in machinery and tools.

Under the economic theory, these items are not considered as a part of the manufacturing overhead. Under certain popular theories advanced by engineers and accountants, these items play a most important part. The economist, and the accountant who endeavors to base his accounting on a substantial economic foundation, argues that rent plays no part in the manufacturing cost. It is an item of general overhead, to be taken into consideration in fixing the selling price, but from the standpoint of the business, taken as a whole, is a deduction from income, and no part of manufacturing costs. It is probable that before this question can be satisfactorily settled, considerable research on the part of men possessing the necessary qualifications will be necessary. It has in its favor, that its exclusion from manufacturing cost facilitates comparison where some concerns own their buildings, while others are obliged from their lack of capital to share a portion of their income with the landlord.

It will be pointed out by the opposers of this theory that a concern purporting to own its plant is, in fact, paying interest on capital borrowed for the purpose. It will further be pointed

out by such persons that even though this were an investment of owned capital taxes are paid on the property in lieu of rent and interest. This contention may be met by the supporters of the economic theory with the statement that there is not a sufficient similarity in amount as among these three items to permit of their being included in the manufacturing overhead and thus tend to obscure the true cost of manufacture and interfere with a comparison of costs composed of like items.

There would appear to be no more reason for including interest on capital and taxes, than rent, in manufacturing costs, as on account of being similar to rent, they are more properly chargeable against income.

The item of insurance also permits of some discussion. It is argued by the economists that insurance is not a true item of manufacturing cost. Insurance is a premium paid for the protection of capital and being an expense of capital, considered from the standpoint of the business as a whole, is a deduction from income. Advancement of this theory is usually confronted with the query as to why the salary of the watchman at the factory, who is engaged in protecting the capital of his employer, is not treated as a deduction from income rather than a part of manufacturing expense.

Having disposed rather indefinitely of the various theories covering certain of the items making up the overhead, they may now be considered with regard to those which fall within the control of the operating department, and with regard to certain of these, those which may be said to fall specifically within the control of the foreman, as well as those which do not fall within the control of the operating department. They may be listed and grouped as follows:

- Under control of Operating Department
  - Under control of foreman
    - Heat,
    - Light,
    - Power,
    - Repairs and maintenance,
    - Depreciation of machinery and tools.
  - Superintendence
- Not under control of Operating Department
  - Rent,
  - Taxes,
  - Insurance,
  - Interest.

It will now be necessary to consider with regard to the above items their distribution to the departments and the various bases upon which they may be distributed. There may be eliminated from this class, repairs and maintenance, and depreciation of machinery and tools, since such items are local in their origin and do not require distribution.

Heat may be distributed on a basis of cubic yards, after first obtaining the cubic contents of all departments receiving heat. The cost of heat for all departments is divided by the number of cubic yards contained in same, and multiplying the rate thus obtained by the number of cubic yards in each department, to ascertain the cost of heat applicable to each.

The distribution of light depends upon whether or not facilities for measuring same by meter are available. Where electricity is used, and meters are found, the unit of measurement is the kilowatt hour. Where gas is measured by meter, the unit of measurement is the cubic foot. Where meters are not available light is distributed on the basis of square feet of floor space.

Power is apportioned on a basis of horsepower hours. This unit is obtained by multiplying the horsepower of the machines by the number of hours in operation.

Superintendence may be distributed on a basis of direct labor hours; rent on a basis of square feet; taxes on a percentage basis, the percentage being computed on the value which the contents of any given department bears to the total assessed value of all departments.

Insurance may or may not permit of localization. It should be localized, if possible; if impossible, it should be distributed on the basis of value. Interest should likewise be apportioned on the basis of value. It has not been thought necessary to repeat in each instance the formula for distribution, on account of its being practically the same in each instance and having been once given in connection with the distribution of heat.

CHAPTER XIII

Machine Rates

Distribution may not cease with departments. Having allocated the items of expense thus, we may go on further and redistribute within departments to processes, to individuals, or to

machines. The theory being in each case the same, but as applied to machines slightly more interesting, we may proceed with its application thereto, and to discuss the question of machine rates.

The subject matter for distribution will depend upon the type of system, and may embody overhead alone, a combination of labor and overhead, or a still further combination of material, labor and overhead. The rates are of two kinds—the departmental, sometimes referred to as the "old" machine rate, and the allocated rate, sometimes known as the "new" machine rate.

The allocated rate may be either the fixed rate, involving one supplementary, or the scientific rate, involving two supplementaries. In order to find the departmental rate, it is necessary to divide the actual overhead of the department by the number of actual machine hours for the entire department. A rate is thus obtained which furnishes a basis for distributing the overhead of the jobs, in accordance with the number of machine hours shown by the respective jobs. This method is satisfactory, in case there is no bench work and the machines are of the same type, of the same value, occupy the same amount of floor space, and use the same amount of power.

It should be noted that this method pro-rates the overhead. Objection to it is found in that it does not sufficiently localize the overhead, and the objection gives rise to a demand for a method which will permit of as much direct distribution as is possible. To supply this demand, the allocated machine rate, covering labor and overhead, was evolved. The rate here is obtained by dividing the total cost of labor and overhead as allocated to individual machines by the number of hours the corresponding machines are in operation. The cost applicable to the jobs in question is obtained by multiplying the rate by the number of machine hours on the respective jobs. This method may be used to advantage where the majority of processes are machine. Bench work, of course, complicates matters, and attention to the physical arrangement should be given in order that machines of the same type may be in the same group.

The fixed rate contemplates the use of one determined upon the basis of actual running time during the next preceding month or period. The charge to the jobs is obtained by multiplying the number of operating hours per job by the rate and crediting to the overhead a corresponding amount. The amount so cred-

ited, which, it will be noted, is an estimate based on past experience, will be offset at the end of the current month or period by the actual cost during the period, and as usually happens a difference will result.

This difference may mean that the fixed rate upon which the charges to jobs have been made was either too high or too low, and the difference must be distributed either as a debit or a credit to the cost of the jobs, in accordance with whether the fixed rate was too high or too low. It gives rise to what is known as a supplementary rate, and is obtained by dividing the "difference" by the actual number of operating hours. The redistribution is brought about by multiplying this supplementary rate by the number of actual operating hours shown by the respective jobs.

The scientific rate is the most complicated, but produces the most satisfactory results. It contemplates the estimating, or predetermining, of certain items of overhead for the year or period. Among these are:

Superintendence,	Depreciation,
Heat,	Taxes,
Light,	Insurance,
Power,	Interest.

The scientific rate also contemplates operation on the basis of maximum running time for each machine during the entire year or period. Items of overhead are first distributed to departments and subsequently to machines. The machine cost is then divided by the maximum operating hours in order to get a rate per hour. The charge to jobs is obtained by multiplying the number of actual operating hours devoted to the job, by the rate, and the crediting of a corresponding amount to the overhead.

Idle time, as in the case of the fixed rate, gives rise to the necessity for further distribution and the obtaining of what is known as the first supplementary rate. This is ascertained by dividing the cost of the idle time by the total number of actual operating hours, and the distribution by multiplying the first supplementary by the number of hours on each job. As jobs are charged a corresponding credit is made to the overhead. It will be remembered that there are now two credits to the overhead, one arising at the time of applying the machine rate, and one at the time of applying the first supplementary. The process from

this point is precisely the same as in the case of the fixed rate. Actual overhead for the month or period is now ascertained and charged to the overhead, thereby offsetting the credits just previously mentioned and usually resulting in a difference between the actual overhead and the predetermined overhead, plus the first supplementary rate. The manner of disposing of this difference gives rise to the second supplementary rate, which is obtained by dividing this difference by the actual operating hours on all jobs and distributing to the jobs in accordance with the number of hours each shows. As this last supplementary is charged, overhead is credited, thus actually balancing the overhead account. In order to bring this out, reference to the following ledger account, as well as the succeeding illustration, may be found helpful:

OVERHEAD ACCOUNT

Actual	$3,000.00	Machine rate	$2,000.00
		1st Supplementary	400.00
		2d "	600.00
	$3,000.00		$3,000.00

ILLUSTRATION

	Full Time	Estimated Overhead	Machine Rate
	2,400 hours	$2,400.00	$1.00
Actual time	2,000 "		
	400 hours	Idle hours × $1.00 = $400.00.	

2,000 hours) $400.00

.20 = 1st Supplementary.

$3,000.00 = Actual overhead.
2,400.00 = Estimated overhead.
2,000) 600.00 = Excess to be distributed
.30 = 2d Supplementary.

575 Hours	720 Hours	705 Hours.
Job No. 1	Job No. 2	Job No. 3
575 × $1.00 = $575.00	720 × $1.00 = $720.00	705 × $1.00 = $705.00
575 × .20 = 115.00	720 × .20 = 144.00	705 × .20 = 141.00
575 × .30 = 172.50	720 × .30 = 216.00	705 × .30 = 211.50
$862.50	$1,080.00	$1,057.50

$862.50
1,080.00
1,057.50

$3,000.00

(*To be continued*)

Organized Labor's Attitude Toward Machinery

By Paul Klapper, Ph.D.

Part VII

CHAPTER V

Organized Labor's Policies Toward the Machines

We have just completed a detailed study of the attitude and action of typical labor unions when their respective crafts were mechanized. We were guided by the chronological sequence as far as possible, and hence our preceding chapter lacks systematization of events, and emphasis on union principles and policies, rather than on particular occurrences. Our justification, of course, is the fact that particular events and actions must be known before we can generalize with any degree of justice and accuracy. What we have seen thus far has shown us that machinery has not only tended to weaken and destroy the labor organizations themselves through a number of disintegrating causes, but also to bring demoralization, for the time being, into the ranks of the workmen through displacement, and its attending dire and distressing consequences. Organized labor's actions in machine matters were guided not only by these two results, but also by attempts to counteract them as far as possible, and thus save itself and those whose welfare is its raison d'etre. Whatever means and methods were adopted were prompted either by an attempt to limit the output or to increase the jurisdiction of the union, and thus regain the lost monopoly of the labor of its craft. Let us consider each in its turn.

Attempts at Limitation of Output

Machinery and its application of mechanical power tended to increase the output in each industry by tremendous proportions. But at the same time it showed an equally strong tendency to decrease the numbers employed in almost the same ratio as the product was augmented. The results are obvious. Despite an increased demand due to lower prices, the market's demand for a particular commodity was soon answered, and often the market became overstocked. Labor unions tried to wrest one concession

and another from the employing classes, which sought to decrease the output in a given time so that the working season would last longer, and the number of artisans who were idle would be curtailed. They attempted to gain this policy through a number of demands, the most important of which are:

(*a*) *To Decrease the Hours of Employment.*—To start out with a general law that all reductions in the hours of labor are attempts to limit the output would be an injustice to the workmen and false from the point of view of economics. When men toil twelve and fourteen hours a day they are entitled to a decrease in the working time. When any industry is conducted on a time scale far in excess of the time of an average day's work, the workers can justly demand a reduction in hours, without being charged with an attempt to limit the output. We must differentiate, therefore, between a legitimate decrease in the hours of employment and one whose object is to produce a reduced output in an industry, which is an illegitimate demand.

There are many who hold that it is not profitable to the employer to keep his men working beyond the eighth hour on any day. As the time advances, they argue, an individual's strength gives out, his senses are less active, his mind numbed, and the expense of running machinery and paying for workmen is greater than the value of the stock produced. From statistics and experiment that they quote, they try to show that the output of the fifth, the ninth and the tenth hours is much below that of the others, but whether or not it is below the profit point is hard to estimate. Without going into the merits of the argument we must recall that when the work is 95% machine labor and 5% individual watching and guidance, these statements would hardly hold true. The tenth hour is as profitable as the second, the fourteenth as remunerative as the tenth.

Geo. A. Schelling, a well-known labor writer, says: "The theory that the reduction of hours of labor adds to the cost of production is fallacious, and cannot be maintained. Attention is called to the fact that the nations which are both the wealthiest and the strongest in the world's markets are those in which the hours of labor are the shortest, such as Great Britain and the United States. Contrariwise, the nations that are both the poorest and the weakest are those in which the longest hours of labor prevail." (Leather Workers' Journal, Feb. 1, 1901). This is a

beautiful statement, but a splendid example of economic and intellectual astigmatism of the tendency to explain everything from one point of view in terms of one law. Such conditions as control of raw materials, shipping facilities, climate, soil, temperament of people are brushed aside for a pet theory. President John Mitchell, writing in the same paper, tells us: "Indeed, it is surprising to note the progress the miners have been making since the inauguration of the eight-hour day, three years ago. In many places they are organizing libraries, taking interest in public questions, and their family life has become much improved and sweetened. But you would be surprised to see the effect this has had in reducing drunkenness. The eight-hour day is the greatest temperance advocate I know."

But this does not throw any light on the unsentimental question—"Why does the introduction of machinery mark an immediate movement on the part of the workers to reduce the hours of labor, if not for the purpose that was suggested, viz.: to curtail the output per day, and thus increase the length of the working seasons of the year?" No sooner was the jar and bottle blowing machinery installed, than the glass workers began a campaign for an eight-hour day in their craft. They soon abandoned the demand because they realized that since the glass factories were running almost all day and all night, an eight-hour day would mean three instead of two shifts, twenty-four instead of twenty hours. Their resolution adds: "While this would be good under the present (hand labor) conditions, it would work hard in the reign of automatic machinery. Thus we would have three sets of apprentices, who would turn out an extra supply of journeymen, just at the time when we want to reduce the labor supply." It was a question of immediate gain vs. future loss, and the glass workers decided to wait. (Convention, 1904, p. 41.)

The iron moulders and the shoe workers began a crusade for an eight-hour day, but the strikes and lockouts followed in such rapid succession that the unions realized the hopelessness of the situation and sought to keep their men from complete displacement. In answer to the charge, the president of the Iron Moulders' Union admitted that some local unions were guilty, but he added that the central body and its leaders do not tolerate arbitrary limitation of output by workmen and locals, and that they are equally opposed to excessive exactions by employers, for he

added: "It is as much the duty of a trade union to protect its members against the excessive day's work as it is to protect him in his wages. We cannot ask a worker to consent to be driven like a slave to the point of exhaustion, nor to tamely submit to exactions which shorten our lives and prematurely incapacitate us for useful toil." (Toronto Convention, 1902.)

No labor union carried on a more vigorous campaign than did the International Typographical Union for a uniform eight-hour day, nor was any body of organized labor so successful. Under the old hand-setting process, a man would set for six or seven hours, and spend three or four in distributing type and in "pasting up the dupes." But since the linotype abolished the long process of breaking up set matter and assorting the type, the employers made little objection to an eight-hour day on the linotype. Then, too, newspapers want men during those hours when the paper is preparing for the press. After that time they are not needed much. This peculiar trade condition accounts for the fact that no strong sentiment manifested itself against the reduced day's work. But in the book and job printing offices, where conditions differed, we do not find the employers prone to grant the eight-hour day, since its inauguration meant a decided decrease in output. How successful the printers have been we can see from the following tables compiled from figures and reports gathered by the Typographical Unions, the Typothetæ, and the United States Industrial Commission.

The first table represents 476 locals of 450 cities, whose jurisdiction contains 363 morning newspapers, 436 evening newspapers, 390 weekly papers, and 466 book and job printing offices. The results are as follows:

COMPARISON OF HOURS—HAND *VS.* MACHINE OPERATORS

Hours	Hand	Machine	Hours	Hand	Machine
36	..	1	51	2	1
40	..	2	53	45	10
42	..	2	53½	4	..
44	..	1	54	349	64
45	..	2	56	3	1
47	1	..	57	5	1
48	24	130	58	3	..
49	..	2	59	19	1
50	1	..	60	3	1
50½	1	..			

1903

Name of Union	Hours per Week	
	No. Machine	By Hand
Indianapolis	48	59
Philadelphia	48	59
Albany	48	59
Chicago	36–48	59
New Orleans	42–48	59
Detroit	50	56
Minneapolis	54	59
Cleveland	48	59
Syracuse	48	54
Richmond	54	60
Toronto	51	54
Brooklyn	48	59
Hartford	48	59
Columbia	48	59
Montreal	45–54	59
Seattle	48	54
Madison	60	60
Poughkeepsie	60	60
Hoboken	48	60
Cincinnati	40	48
St. Louis	48	48
Buffalo	48	54
Rochester	48	48
New York, No. 6	48	48
Newark	48	48
Average	48.24	54.04

1904

Number of Hours in Week's Work	Hand-Office Compositors				Machine-Office Compositors			
	A. M. Paper	P. M. Paper	W'kly Paper	Book and Job	A. M. Paper	P. M. Paper	W'kly Paper	Book and Job
Union reporting less than 36 hours	...	...	...	...	1	1	1	1
" " 36 to 40 hours	7	5	...	1	12	8	4	4
" " 41 " 47 "	18	13	4	1	43	26	14	12
" " 48 "	151	127	84	70	284	323	218	185
" " 49 " 54 "	39	73	83	103	19	45	30	34
" " 54 "	149	289	342	434	49	124	87	89
" " 55 " 60 "	2	7	7	12	1	2	1	2

Prof. Barnett, who gathered figures of 1,536 local unions, reports as follows in his " The Introduction of the Linotype."

IN FORCE JAN. 1, 1904

Number of Hours in Week's Work	Morning Newspaper Offices	Evening Newspaper Offices	Weekly Paper Offices	Book and Job	Total	
Unions reporting less than 48	48	38	11	18	115	68%
" " 48	266	297	199	193	934	
" " more than 48 but less than 54	15	37	38	23	113	32%
" " 54	53	139	93	86	371	
" " more than 54	1	...	...	2	3	
Total	.....	.....	.....	.....	1,536 scales	100%

Since 1904–1905 the eight-hour day has been extending gradually, until over 85% of the union offices in the country have succeeded in establishing it. We have seen how different a story the boot and shoe workers and iron moulders have to tell.

2. To Force a Time Scale Rather Than a Piece System.— Of the many and varied methods of paying wages, the time and the piece systems are the most common. Under the former a worker is paid a stipulated sum per hour, or hours, or day, or week, regardless of the amount produced. If his efficiency or speed is such as to class him as an inefficient laborer, the employer discharges him and hires a more capable man in his stead. Under the latter system a worker is paid a stipulated sum per article produced, per piece, hence the name. The owner is less concerned about efficiency; for inefficiency, producing less, earns less, and is thus its own punishment. Under the time system a worker tries to produce an average man's work and no more, since there is no extra reward for additional skill and output. Under the piece system, the abler men are offered an incentive in the form of extra salary, and hence they strain every nerve and fiber to increase their personal product. Evidently the piece system militates against a scheme to keep the output at a minimum. Hence we find all the unions we selected invariably opposed to this method of reckoning wages and urging upon its members and locals to adopt the time scale.

President Martin Fox, of the Iron Moulders' Union, speaking on this subject, said: " We are hopeful that in a short time we can overcome the difficulty that is being met with, if we can agree

with employers' associations on the wage system which shall prevail in the operation of these machines. The wage question is the real point of friction in the machine problem. A great deal of opposition has been met with from employers who fear we want to control the machine, i. e., the output. This is not our purpose." (Ind. Com., Vol. XIV, p. 150.)

The wage question here referred to reflects the action taken by the Detroit Conference in April, 1901, when the Special Committee reported that the inequities produced by the machines can be abolished, and the "equities of the situation preserved—by a stipulated day's output for a wage mutually agreeable to both—if the machines are not controlled, but keep belching forth their product, the special trade will be overrun, and special overproduction will result."

The constitutions of the various moulders' local unions contain clauses like the following before 1903, the period of general defeat: "No member of this union shall be allowed to work on machinery by the piece, or encourage the same, and any member knowing a brother to so offend, shall report same to union." Not until 1906 did the union relinquish the demand for the time scale and decide to allow each subordinate union to accept a piece system.

Mr. John Fritz, a millionaire steel foundry owner, speaking on the piece system, says: "It is terrible how the workmen are being goaded on. We have no right to shorten a man's life by spurring him on to break the record of yesterday. The piece systems and all bonus systems are injurious stimulants to production. The employer should pay his man a fair price for a day's work and be content." (Munsey, May, 1907—H. N. Casson.)

In 1891, when the linotype had hardly passed the experimental stages, a committee on machine matters reported that the convention pass a resolution demanding "that all subordinate unions, when fixing the time scale for the machines, shall demand a time scale exclusively, for the machine labor is of a more exhaustive character, mentally and physically, than the hand work." The convention rejected the report at once. It expressed its opinion that the piece system is bad for the worker and for the trade, but, since it favored the speediest adjustment to the new conditions, it would not curtail the principle of local autonomy which pre-

vailed. Hence each union was to try to force a time system, but if matters came to an issue, the piece system should be accepted (39th Convention Report). At every succeeding convention till 1899, resolutions demanding the abolition of the linometers, clocks which registered the output, were thrown out, but the officers nevertheless stigmatized them as vicious.

3. *To Set a Maximum Limit to a Man's Work Per Day.*—The most direct form of limiting the output in any industry, and the means that have been meeting with greatest opposition from the ranks of labor as well as of capital, is the practice of fixing as low a given amount of work as possible, and deciding that that should be the measure of a day's work. When the worker has completed that, his day's task is at an end. Thus we find that till 1895 or 1896 it was the practice among the flint workers to set a maximum for a day's output. This limit was removed when the flint workers were threatened in the competition with non-union men. In the Window Glass Cutters' industry, the limit was set by the month, and men often worked until ten at night and on Sundays to complete the limit set, because they had idled their time away at the beginning. In 1901 the flint workers controlled fourteen branches of the trade, and in eight of these the quantity of a day's output was still limited. Only six had succeeded in introducing the unlimited system. (Ind. Com., Vol. XV, p. 426.) We find the same practice very common in England. "In some branches of the Potters and Glass Bottle Makers, a similar limitation of individual output has prevailed under the name of 'stint' or 'tantum.' In our light metal shops . . . the society has a tantum fixed which the men are not allowed to exceed; if they do, it is paid into the Society." (Webb, Ind. Democracy, Vol. II, p. 446.)

The iron moulders have no open minimum fixed, but complaint is constantly made that the men live up to a secret limit. How true this is we cannot say, but it may be only the expression of a lingering hostile individual attitude toward the machine. J. K. Webster (Pres. Webster Manf. Co., Chicago), when questioned by the United States Industrial Com., gave the following testimony (Vol. VIII, p. 150):

"*Ques.*—Do the unions, as far as you know, attempt to fix the production of a man?

Ans.—Yes, this is a very decided tendency.

Ques.—Do you consider that objectionable?

Ans.—Yes. Both to man and employer. No man has a right to see how little he can do.

Ques.—Is there never a slave-driving tendency on the part of the employer to make a showing?

Ans.—Yes. I think there is no doubt about it at all. That is the chief objection of the union to piece work."

While the Typographical Union was too wary of adverse criticism, and too experienced in trade union principles to attempt any such scheme, it nevertheless opposed what is known as the "bonus system." Under this method the employers offer to each worker a bonus for every thousand ems produced in a day, beyond a certain minimum. This caused an extra effort on the part of the operators which is most fatiguing, and makes labor intense. It also makes conspicuous the best as well as the poorest workers, and really changes the system to the piece scale. At the 42d, 46th, and 48th Conventions in 1894, 1900, and 1902 respectively, resolutions were passed which declared: "No machine operator shall be allowed to accept a bonus, based on setting so many thousand over a prescribed number, where such bonus is voluntary on part of employer and not provided for in scale of prices."

At the 41st and 48th Conventions, the constitution was amended to read: "No member shall be allowed to accept work where a task, stint or dead line is forced upon the operator," and "operators shall not accept a bonus for speed."

The printers have been criticized for their stand on the "bonus" question. It is asserted that a bonus or premium system confers benefits upon employer and employee, that when the rights of both have been fully secured, they are partners in further progress. It cannot be denied that to prohibit the bonus or premium system is one way of forcing a limited output, but the union was exceedingly anxious to keep as many men employed as possible. Hence they sought to reserve for the displaced men the extra work done, because of the incentive of the bonus.

4. *To Reduce the Number of Apprentices.*—In all the strong unions that have undergone a marked metamorphosis through machinery, there is a tendency to reduce the ratio of apprentices to journeymen in the shop. Since the labor markets of such crafts are over-supplied and the skill necessary for efficient work can be acquired in a shorter time, organized labor is anxious to reduce

this supply. Apprentices usually work for an especially low rate; hence employers try to have as many as they can, and produce an increased output at a decreased cost, thus aggravating the union's troubles. For years the moulders sought to uphold the ratio of 1:8, but in 1907 they were obliged to yield to 1:5, the ratio demanded by the employer.

Dr. Sakolski, in his study, "Entrance to the Trades," cites the following cases: "The five years' term of the Glass Bottle Blowers' Association, for example, is enforced only as a concession to the employers who are enabled thereby to employ a journeyman at apprenticeship wages. An apprentice glass bottle blower generally becomes efficient inside of half the term of apprenticeship. Similarly the term of apprenticeship for a kiln man in pottery is fixed by the union at three years, but the most radical of the employers declare, 'that an apprentice is a kiln man in one year if he is ever going to be.' The three years of apprenticeship of the Cigar Makers' Union under modern conditions is likewise held to be excessive and is forced only in exceptional cases. Immigrants, after a few weeks' instruction, are enabled to roll cigars with moderate speed and accuracy, and after a few months of steady practice, become proficient in their line of work." (U. S. Labor Report No. 67.) In most industries that were mechanized the degree of skill was reduced until it became nil. The apprenticeship problem and that of its ratio, therefore, solved themselves by ceasing to be questions. But where skill was still retained after the change, the union's efforts have always been to decrease the number of learners, while the employers sought their increase.

Through these four means, the unions sought to keep their members at work for periods that were more or less regular and save them from poverty and the wretchedness which follow upon the demoralization of an industry, as in the boot and shoe trade.

The second great problem that guided the union's machine policy was the loss that we noted in an earlier part of our study, of the monopoly, partial or whole, of the labor of its craft. Hence we now turn to

Attempts at Increasing the Union's Jurisdiction

Since the introduction of machinery often made apprenticeship periods unnecessary, encouraged an influx of unskilled labor, native and immigrant, as well as women and children,

brought new processes and hence new classes of workers, over-specialized an industry, and thus alienated a branch of the craft, organized labor found that the vital problem was to preserve its threatened power, to regain its waning control of the workers. Nothing can be done to counteract the tendency toward minute subdivision and specialization. Its disintegrating influence upon the union must go on. But effective measures can be taken to maintain an apprenticeship system and to enroll all new classes of workers, skilled and unskilled under the union banner. Hence the endeavors to increase or maintain the jurisdiction of organized labor over its craft were worked out along the following lines:

I. THE STRUGGLE TO MAINTAIN THE APPRENTICESHIP PERIOD

As far back as 1857 or 1860, the iron moulders decided on a minimum apprenticeship ratio of one learner to eight journeymen. In 1900, the officers and members of the executive board began a crusade which lasted for years, the object of which was to change the ratio to 1:5, so that the foundrymen would find less need of breaking union rules, and employing non-union "handy" men or helpers. But the convention, for years, refused to take action. The craft was in a state of change and they wanted to reserve what work they could for themselves, and keep out newcomers through a strict apprenticeship regulation. The Iron Moulders' Journal (the workmen's paper) says: "It is impossible to discover the reason which led the moulders to adopt this proportion though there are ample indications that the results were not reached through collection of statistics." The president cited the case of the stove moulders who changed to 1:5, and adds, "I doubt if one instance of serious injury to the journeyman moulder can be cited." In 1906 a special committee appointed, reported, "We, your committee, recommend that that part of the president's report be concerned in." This was passed because the ratio was really non-existent since the unions were completely defeated in the long struggles of 1903–1906, and the foundry owners disregarded all union laws and regulations.

The shoeworkers always guarded the apprenticeship rules very jealously. In the earlier constitutions of the Knights of St. Crispin, we find clauses which prohibit teaching, thus restricting the number of apprentices and tending to keep their trade door shut. But since the machines have so completely changed

the craft, and reduced its skill, apprenticeship regulations and ratio are not taken seriously. They are found in the constitutions and agreements as a matter of form. After a few weeks, a boy can become a proficient machine shoemaker. In such an industry apprenticeship laws are useless.

The glass workers still guard the apprenticeship rules. In the 1902–3 wage scale regulations, we find a clause which sets the ratio in shops controlled by the Glass Bottle Blowers' Association at 15:1 and a declaration that "firms who for any reason reduce the number of journeymen must also reduce the number of apprentices who must serve a period of five years." In 1907 the time was reduced to four years owing to a persistent demand in the season when work was plentiful and help needed. But the union declared that, "whereas our apprenticeship rule of five years is looked upon by the boys and the parents as an imposition, we recommend a reduction to four."

At the 1902 Convention of the Flint Glass Workers, it was decided to allow one apprentice to two journeymen in small shops, but not in excess of 25% in smaller ones, and to fix the period at four years. Their President, Mr. Rowe, reporting to the convention said that he had tried to gain a fifty hour per week concession from the employers, but had failed. The factory owners declared that (1) they did not have enough help; (2) the union was not in a position to furnish it; (3) the union should increase the apprenticeship ratio to something higher than 25%; (4) it should allow the employment of machinists of any union to work the new machines. In commenting, the president said: "Our members are fearful to open the gates to an influx from these sources, as it may deluge them and demoralize their trade."

Mr. Rowe decided that the union should wait two years. If at that time the union should find that it could not supply the labor market, then machinists should be taken in and given membership as soon as they became proficient moulders. This is a better expedient than increasing the apprenticeship ratio, he believes, for in case of a slackened season, a machinist can go back to his old trade, but additional apprentices mean additional idlers on their hands.

John Graham Brooks declares: "The limitation of the number of apprentices is an inexcusable tyranny over American liberty." With this view the union does not concern itself. Its reason for existence is the preservation of its members. To limit

the number of apprenticeships increases its jurisdiction and keeps the labor market from being overstocked. Whether the tyranny is excusable or not, the unions will continue to practice it as long as they can.

With the printers, apprenticeship regulations mean still more. They always hoped to raise the skill of the trade to such a degree that the craft would become a closed corporation open only to those specially trained in the work. In 1886, the old learners' system was revised; the new one set the period at five years, the ratio at 1:5, and demanded a guarantee that the boy would be given an "all-'round training." In 1892, when the linotype had come to stay, the Typographical Union realized its precarious position and hastened to outline its stand on the apprenticeship question. Since linotype is really printing, the new machines must come under the jurisdiction of the union for it really means no new power added to the labor organization, but an extension of the right that it already has to control new devices and improvements. The union in its eagerness to protect the displaced journeymen, to provide them with work, and establish as soon as possible the conditions and adjustments that existed prior to the introduction of the machine, made one discrimination and another against the apprentice lads. Some of these were slight, others far-reaching, but all aimed to reserve the operation of the linotype for the old hand printer.

In 1893, (41st Convention, p. 201) the following enactment was passed: "Apprentices may work upon the machine in the last year of their apprenticeship, but shall be paid two thirds of the wages of regular operators." That year and the following saw the introduction of 568 and 890 machines respectively, an increase of about 300% and a tripling of the men idle in the trade. The union found that it must further limit the concession to the apprentices and in 1894 (42d Convention, p. 31), it decided to allow them to operate the machines only the last six weeks of their period, provided they received full wages at the time. In 1899 (44th Convention, p. 50) it was decided to allow these lads to practice on the machines during the last three months of their apprenticeship, but the product was not to be used or sold by the employers. This may seem like a concession, but when we consider the last proviso, we can readily see that it was a very restrictive measure, for who would keep machines in his shops to give practice, and enjoy no remuneration? The apprentice was

therefore kept busy at all hand work, for the results of his labor were then saleable.

At the 45th Convention (1899, p. 43) action was taken making it mandatory to register apprentices by signing uniform contracts which contained the union regulations. Thus the union was getting a surer hold on these boys and had better control of them. President Lynch in his address in 1901 (47th Convention), declared that entrance regulations were not designed to set a higher standard and emphasizes the fact that the higher the qualifications for entrance to a craft, the higher is the wage rate therein. Hence, "we must stop spoiling good blacksmiths and make better printers" by requiring each apprentice to serve a six months' trial period. In 1903 (49th Convention) it was proposed and passed that owing to the fact that trade adjustment had been made, conditions settled, and displaced men provided for, permission might be given to the apprentice to work on the linotype machine during his last three months and produce material which could be used by the employer, the wage rate being the same as that paid to those old journeymen who were learning to operate the machines.

In 1905, and again in 1907 (51st and 53d Convention, p. 248–255) the apprenticeship regulations were modified and embodied in the constitution. The content and scope of these which govern to-day, are briefly as follows:

1. To Better Control Apprentices.—No apprentice may leave one office and go to another without the written consent of the old employer and the signature of the president of the union.

2. Nature of Work.—All apprentices in publication offices where type-setting is done by machinery, must spend the last two years on the case (hand work) on all intricate work, the last six months on the linotype. The apprenticeship period is to be four years.

3. Proficiency.—To offset specializing tendency in the trades, a special committee shall study courses of study, and outline the best system of industrial training and shall spend a reasonable sum for library, teaching devices and the like.

We see then that the printers adhered to a strict apprenticeship policy in the hopes of (1) giving displaced men work, (2) affording journeymen handworkers the best opportunity to learn to work the linotype, and (3) keeping non-printers out of the printing trade. *(To be continued)*

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EDITORIAL

Scotland's Ideals of Accountancy Education

The canny Scots have always commanded our sincere respect. Among them are some of the best accountants, economists and business men of the world. Practically all are keen and logical thinkers; measures they advocate are sure to be well considered, and are likely to be justified by experience. We have sometimes suspected them of too great conservatism, especially in their methods of education for accountancy. They have apparently been hampered by old traditions.

There are indications now, however, that our suspicions were not entirely well founded. Ideas about university education for business and accountancy recently expressed by leading authorities in the fields of economics and accounting are worthy of our most careful consideration. Among those to express such ideas is Professor Shield Nicholson of the University of Edinburgh. In an article in the *Scotsman,* which is reprinted in this issue of the Journal, he suggests that a lectureship on accountancy should be established in the University of Edinburgh, and if a private benefactor cannot be found, the University itself ought to undertake the expense. He is in favor of making the

study of accountancy a part of the already established Arts course rather than the foundation of a separate school. This is in line with the ideas he has already expressed and put into effect, for the modernizing and extending of the old classical education.

This view, although not novel in this country, is one to which we cannot subscribe. It is doubtless true that an Arts degree, because of its greater antiquity, commands more respect generally than a degree in Commerce. It may confidently be expected, however, that in the course of time the Commerce degree will be equally well known and respected, and it will always stand for a definite type of training.

More significant to us is his suggestion that candidates for election to the Societies of Chartered Accountants should be required not merely to attend law lectures of the University and pass the Society examinations in law, but also to pass the regular law examinations of the University. This, of course, would tend to make their knowledge of law broader and more thorough, though it might include a knowledge of subjects that are not generally regarded as absolutely essential for the practicing accountant.

The Accountants' Magazine, the official organ of the Scottish Chartered Accountants, not only concurs with Professor Nicholson's opinion; it goes even further. It expresses its belief in a thorough and broad knowledge of law, economics and accounts, to be tested by the University rather than by the Accountants Societies. Its opinion is expressed as follows:

> "The ideal system would be one where the professional man should receive the whole of the necessary instruction in theory and principles at a university, from persons whose life-work was the imparting of such instruction, and should receive from the university such degree or certificate as should testify to his having sufficiently profited thereby; and where it would only remain for the professional body to which he seeks admission to satisfy itself that he had gained adequate practical experience of professional work, and was able intelligently to apply to practical problems put before him the knowledge and experience which he had acquired."

These ideas express exactly our own belief. Moreover, their accomplishment is far easier here than abroad. We have no traditions to hamper us, nor are we ridden with the examination system. The only dangerous influence, perhaps, is the national tendency to hurry. Men who wish to enter the profession of public accountancy are often so anxious to be at their work

quickly that they look for the shortest and easiest way, rather than for the way that will give them the soundest basis for successful and useful work. Few examinations were ever given that could not be passed by cramming. The remedy cannot be found in longer or harder examinations. It can only be found in insistence by the C. P. A. societies that candidates for admission shall have received a certain amount of instruction in the principles of economics, finance, law and accounts, testified to by a degree or certificate from a body of qualified educators.

It is not to be doubted that the examiners are as well able as any body of men to judge the fitness of a candidate from the data presented in his answers to the examinations they set. The trouble is the insufficiency of data. Four, three or even two years in a university with regular attendance at class room exercises and lectures would unquestionably furnish better evidence from which to judge of a man's fitness for the profession of public accountancy than any set of examinations. What is more important, it would also furnish the kind of broad, thorough training that the welfare of the profession requires.

The nature of that university instruction need not be discussed further here. It is a less important and less urgent question. In some of the universities of the country, this education does take the form suggested by Professor Nicholson, in that the training for accountancy is a part of the Arts course. Other universities have separate schools of accounts, commerce or business administration—the name is immaterial—in which the instruction is directed entirely toward the profession of accountancy and other business professions. Some of them require the Arts degree for entrance. Others do not. All of them, however, are striving toward the same end and in the comparatively few years they have existed have advanced remarkably in efficiency and have contributed to the establishment of higher professional ideals.

The accountants of the United States are in a much better position for advancement than those in Scotland. It is for them to say whether the training for their work shall be broad and thorough and on the same plane with the training for law and medicine. They have already shown a keen realization of the importance of this kind of education in helping to raise their profession to its rightful place. They know that the training

and fitness of accountants to perform the tasks they undertake will determine the future of the profession far more quickly and surely than any legislative enactment. Whether they will entrust to the universities the task of judging the educational fitness and training of candidates is a question for the future.

Reciprocity with Canada

The tariff wall between the United States and Canada has never had economic justification. We know that free trade between New York and Mississippi, between Maine and Florida, is beneficial to the whole American people, yet this trade between the States is not different from trade between New York and Ontario, or between Mississippi and Manitoba. The American policy of protection is based upon considerations which do not now and never did apply to Canada. Its motive has been the development of manufactures and the shielding of our standard of living against competition with the cheaper labor of Europe.

But from Canada we have nothing to fear. Her resources are like ours, yet not so opulent. Her people are our kinsmen, and their standard of living, if anything, is higher than ours. According to our pet theory of trade the advantage lies altogether with us. In our desire to keep European goods out of our markets we have gone to such extremes and have levied such prohibitive duties that we have been inundated by a flood of cheap foreign labor, the very labor against whose degrading competition it was the avowed purpose of our policy to protect American workmen. Rather than import the choice products of European workmanship, we have imported shiploads of shoddy humanity. On the score of "pauper labor" Canada has more to fear from us than we from Canada.

The notion that reciprocity is a step toward annexation is born of historical ignorance. Not in a thousand years has there been a union of two countries except for the reason that one or the other has gained an economic advantage. Commercial reciprocity will secure both to Canada and the United States all the advantages which political union might bring, and will achieve the desired result with the least possible friction, there being no interference with the social or political institutions of either country. Mr. Champ Clark, who says reciprocity will promote annexation, is entirely wrong. Reciprocity kills annexation.

Cost Accounts and Average Prices

We print elsewhere in this issue a letter from one of our readers who is seeking information on the subject of Cost Accounts and Average Prices—especially, "how the other man does it."

Theoretically, cost accounting has as its object, the finding of true costs. They are intended for a variety of purposes, depending upon the extent to which the refinements are carried. The various purposes will be governed by numerous circumstances. The manager of a concern manufacturing one line of goods exclusively, which goods do not vary in their quality, may have his purpose adequately served if his cost sheet shows him an average cost. On the other hand, in mixed productions, the fact that one or more lines were being manufactured at a loss would not be developed by average costs, any more than departmental inefficiencies or the true cost of various types of automobiles would be shown by the same figures. The kind of information the manager receives depends upon conditions.

Whether actual or average prices should be used in computing the consumption of materials and supplies also depends upon circumstances.

In the ideal organization of the stores department every unit of materials and supplies received would be tagged, so to speak, with its price. As the physical units were issued for consumption they would be credited to stock and charged to goods in process. Then so far as materials were concerned actual cost would be shown.

In the manufacturing concern sufficiently well organized to have a cost department, some system will probably be in use which records and allocates accurately the direct labor. Thus, generally speaking, the second element of cost may be actually fixed.

With the indirect labor and other items of manufacturing expense, comes the real problem. Can this be ascertained so that the amount applicable to each unit of product can be stated accurately? No! After exhausting all the bases of distribution available the fact still remains that the distribution must be more or less of an estimate.

May it not be said, then, that whereas it is more nearly cor-

rect to credit materials consumed in the order of receipt, the averaging of prices is to be sanctioned, if thereby a saving of time results and the costs obtained be sufficiently accurate for practical purposes in any given case?

We should like to hear how you do it and why.

THE JOURNAL OF ACCOUNTANCY desires to correct the mistake that was made in sending out the circular letter signed by Mr. Suffern, President of The American Association of Public Accountants, in reference to the members subscribing to THE JOURNAL, and to state that there is no such association as the American Association of *Certified* Public Accountants. The mistake was caused by a printer's error, which, unfortunately, was overlooked by The Accountancy Publishing Company.

Savings Bank Examinations

An interesting lecture on the system of savings bank examinations now in use in Massachusetts, under the new law, was given on January 21, by Mr. George L. Bishop, C. P. A., of the firm of Storer, Rand & Bishop, of Boston, before the New York University Chapter of the Auxiliary Guild of the New York State Society of Certified Public Accountants. The lecture, which was given in the University Building, was attended by about eighty men and proved of great practical value.

Mr. Bishop explained the conditions in Massachusetts which led to the passage of the act requiring a periodic audit of savings banks by certified public accountants approved by the Banking Commissioner. Mr. Bishop was instrumental in the passage of this law. Rhode Island has passed a similar law and other states have taken steps in that direction.

The remainder of Mr. Bishop's lecture was devoted to the practical details of an audit under the new conditions. He explained the forms and methods used and pointed out some of the errors and frauds which had been discovered.

School of Commerce Dinner

At the Annual Dinner of the New York University School of Commerce, Accounts and Finance held at the Hotel Astor, February 18, 1911, speeches were given by ex-President Joseph E. Sterrett and President Edward L. Suffern, of the American Association of Public Accountants. Mr. Suffern contrasted the educational advantages offered to present day accounting students with those available twenty years ago. Other speakers at the dinner were Consul-General K. Midzuno, ex-Comptroller Herman A. Metz, Judge Isaac F. Russell, Professor Jeremiah W. Jenks of Cornell, F. W. Woolworth, Charles R. Lamb, Edward Porritt and Dean Joseph French Johnson. About three hundred men attended the dinner.

Commercial Education in the University of Edinburgh

By Prof. J. Shield Nicholson

[The following article which appeared in a recent issue of the *Scotsman* is commented upon editorially in this issue of The Journal.]

If we may judge by the silences and the utterances during the past year of those who are expected from their position to be interested in higher commercial education, the changes recently introduced in the Arts Degree in the University of Edinburgh seem to have been altogether unnoticed or altogether misunderstood.

The business man still harps on the need for a degree in Commerce and a Faculty of Commerce, and still uses the term "academic" as a term of reproach or futility.

The following extract from the letter of a person of authority is probably a fair representation of current opinion in business circles: "With regard to what you say as to the recent changes in the Arts Degree, I am afraid that the degree of Master of Arts has all along been looked upon by the average business man as too academic and as having only a remote connection with business efficiency. In fact, so much has the degree been associated by commercial men with a knowledge of Latin and Greek and kindred subjects that it will take some time to eradicate from their minds the impression that, instead of rendering a man more efficient in commercial affairs, the possession of the degree is a distinct drawback."

If the average business man does, indeed, think the possession of the degree of Master of Arts must be a distinct drawback, he cannot be aware of the extent to which by our new ordinances the degree has been modernized. He cannot know that the degree can now be taken without a single one of the old sacred seven subjects being included, whilst in their place a great variety of "modern" subjects may be substituted.

Is it a distinct drawback to the man of business to have a thorough training in French and German? In geography and history treated specially from the economic or commercial side? In chemistry? In mercantile law and political economy? And yet, if he chooses, his son may compile a degree out of these subjects just named, and he may introduce a variety of changes in the subjects according to his abilities or supposed requirements. For all practical purposes except in name the University of Edinburgh provides by its new regulations a variety of degrees in commerce.

Those who think the name is everything and the substance nothing may be reminded of the recent University changes in Australia. Australia at any rate ought to be modern enough and free enough from the incubus of academic tradition. In an article in *The Times* from its Sydney correspondent, on the University of Queensland (29th March, 1910), it is written: "The Act therefore, which has at last incorporated Queensland University, differs a good deal from the draft Bill of 1906. The Faculty

of Arts resumes its proper rank. Commerce as a faculty disappears, probably to be revived where Sydney now places it as a subordinate section of the Arts course." This is exactly the position in Edinburgh; a degree can be taken in Arts which forms an excellent preparation for the higher branches of business, just as a degree in Arts may be taken which forms an excellent preliminary training for law or medicine or teaching or any other profession. A special Board of Studies has been instituted in economics, which except in name is very like a Faculty of Commerce.

It is no doubt true that before taking up these modern subjects for the degree a boy must pass a preliminary, or its equivalent, and this preliminary still retains a certain amount of Latin. On the value of Latin as a school subject nothing remains to be said either for or against; but even from the most narrow business point of view it may be urged that Latin is a good investment if the object is to attain a real command over the most important modern languages—e. g., English, French, Spanish, Italian, etc.

It is true also that, large as is the choice of subjects at present offered for degrees in Arts (with a commercial bias), the list might be extended. By the munificence of Mr. Charles Bruce a lectureship has been founded in the history, principles, and practice of banking, and no doubt when the scheme of lectures has been fully developed a place will be found for the subject in the Arts degree. And there is no reason why, as in other Universities (especially in America), similar special lectureships should not be founded.

The mention of special lectureships naturally leads to the position that the functions of a University are not bounded by the training for and the granting of degrees. Students may attend classes without any intention of taking a degree and in general without passing any entrance examination. Some of the professions in Scotland encourage the attendance on certain classes in the University, although very few of the students aim at a full degree. The Chartered Accountants, for example, concurrently with the term of apprenticeship, have exacted attendance at some of the law classes.

The institution recently of a lectureship in mercantile law was largely due to the recognition of the claims of the accountants. It would be a great advantage to students training for the higher branches of business if a lectureship on accountancy were founded on the lines of the banking lectureship.

If a private benefactor cannot be found to follow the example of Mr. Bruce, the University ought itself to incur the necessary expense. When account is taken of the fees paid by the students attending the class, the expense would not be very formidable; and it must be remembered that this strengthening of the economic or commercial department would tend to improve also the attendance on other classes. The present time is peculiarly favorable for pressing this claim, as the grant from the Treasury must directly or indirectly increase the funds at the disposal of the University.

At the same time, it is of the highest importance to notice that this

specialization of training has certain inconveniences and dangers. If in accordance with some outside regulations students are compelled simply to give attendance on classes and are not obliged to give any proof of having "duly performed" the work of the class, and if the compelling body outside only examines on parts of the subject and on a standard much below the standard for the class examinations, or for the degree, the mere attendance is not likely to benefit the ordinary student very much. If the attendance were voluntary the case would be different, and only those would come who wished to learn. The lectures in a University demand a certain amount of supplementary reading and study, and the mere attendance is not enough. Students of the kind indicated not only gain very little themselves, but they tend to lower the tone of the class. It is of far greater importance that the standard of University teaching should be kept up than that a mere increase of numbers should be encouraged. All the University reforms of recent years have aimed at raising the standard and getting rid of elementary work. If a young man wishes to take a degree (even of the most modern kind) he cannot expect at the same time to give the greater part of his time and energies to actual business. And if he takes only one or two classes he must be allowed sufficient time for working up the subject. The ordinary student who is made to take certain classes by external authority does not in general need to be constantly reminded of the dangers of overwork and overstudy; the danger is the other way. Nor, again, does he need to be warned of the danger of extending his reading too widely, and of the futility of getting up any part of a subject of which he cannot see the immediate practical bearing; here also the danger is altogether the other way.

These are, or ought to be, the commonplaces of education, but they are apt to be forgotten. In the talk about over-pressure we forget that the chief of the old deadly sins was sloth; we forget also the saying of Bagehot that the greatest of all pains to the ordinary man is the pain of getting a new idea. University education, to be worth anything, needs a serious effort on the part of the student. In a paper in the ACCOUNTANT'S MAGAZINE (December, 1909) the expansion of the University on modern lines was duly recognized and appreciated: "The Universities are now showing a disposition to develop what may be called a more technical or practical side, and new lectureships are being founded which are in all respects well adapted for the instruction of accountants. It may therefore be well considered whether the time is not coming, or, indeed, may not have already arrived, when the results of the periodical examinations conducted in the Universities should be accepted as better calculated to show the proficiency of the student than the special examinations conducted by the Board."

Unfortunately, however, the writer goes on to suggest that the accountant students should only be examined on parts of the subjects of the classes which they attend. It would be far preferable either to insist on fewer classes or to send to the University only selected students, than to try to pick and choose portions of lectures and examinations. One of the fundamental ideas in University education is to show how the technical or practical or professional is related to subjects of a wider range. There

are parts of commercial or business training that can only be learned by actual practice; there are others that may be attained in various technical schools and institutions; for the higher forms of business the Universities may offer instruction of a more general character, the value of which is realized at a later stage. And it must be remembered that the development of Universities on the modern side has brought within the range of the University a number of studies which, although in a sense of a general character, are very closely connected with the requirements of practical life.

Correspondence

Cost Accounts, Average Prices

Ridley Park, Pa., February 13, 1911.

To the Journal of Accountancy:

The writer is an accountant in charge of the accounts of a large manufacturing plant.

In our cost accounting we take an average monthly price of all of our raw material that enters into the cost of production.

We arrive at our average as follows:

ARTICLE No. 1

1910						
Jan. 1	Stock	10,000	lbs.	at	10 c.	$1,000.00
4	Purchases	2,000	"	"	9 c.	180.00
7	"	4,000	"	"	10 c.	400.00
9	"	5,000	"	"	11 c.	550.00
12	"	2,000	"	"	10.5 c.	210.00
15	"	6,000	"	"	11 c.	660.00
19	"	3,000	"	"	11 c.	330.00
24	"	5,000	"	"	10.25 c.	512.50
27	"	4,000	"	"	9.75 c.	390.00
30	"	5,000	"	"	11 c.	500.00
			Average			
	"	46,000	10.29			$4,732.50
	Consumed	39,000	"			4,012.20
Feb. 1	Stock	7,000				$720.30

Then we start with a new average each month based on average cost of stock at beginning of month, plus all purchases during month.

We are criticised for not charging our raw material to Cost of Production on basis of actual cost instead of average.

To do so on actual cost we would have to charge January production as follows:

Charge Stock of 10,000 lbs. at 10 c per lb. to the various lines on which this was used.

Then charge Purchase of 2,000 lbs. at 9 c. per lb. to the various lines on which this was used.

And so on, until we have used the 39,000 lbs.

Thus our stock left for use during February would consist of:

2,000 lbs.	at	9.75 c.
5,000 lbs.	"	11 c.

Technically and theoretically, from an accounting standpoint, this is no doubt correct.

As we have over 2,700 different articles of raw material and over 1,000 articles of finished product, we find it impracticable to follow this earmarking of our purchases.

Hence we follow the plan of using a monthly average for our costs of raw material.

You can readily see the almost endless detail as to keeping an accurate record of our production on which separate purchases of raw material are used, and having to work out over 10,000 costs each month, when by using this average we do not have to work out over 500.

We claim our method of averaging is the only practicable way of handling our costs, bearing in mind the large saving in labor by our system of averaging prices of raw material over what it would be if we attempted to use our 2,700 different articles of raw material at the actual purchase price of the various lines on which they would be used.

We know the effect on our Profit and Loss Account of this system of averaging near enough for all practical purposes.

The unknown portion of it would have so slight an effect that we consider it would be unworthy of serious consideration.

I would like to know what method large industries pursue in their Cost Accounting as to cost of raw materials, and would also like to have your views as to my method of averaging.

W. R.

Colorado to Employ Certified Accountants

At a recent meeting of the Colorado Society of Public Accountants a resolution pledging the society to work for a state law requiring that all of the principal accountants employed by the state shall be certified accountants was adopted and a committee appointed to work for the passage of such a law. The committee appointed by J. H. Kingwill, president of the association, is as follows: F. W. Deidesheimer, E. J. Grenfell, J. B. Geijesbeek, F. M. McMahon and J. A. Writer.

Lybrand, Ross Bros. & Montgomery have changed their address from 165 Broadway to 55 Liberty Street (corner of Nassau). The telephone number remains unchanged: 750 Cortlandt.

Book Department

EDITED BY LEE GALLOWAY, Ph.D.

SPEECHES AND ESSAYS, by HENRY CLEWS, New York. The Irving Publishing Company. 456 pp. Price, $1.50.

The financial operations of the American people are carried out on such a stupendous scale as to astonish conservative business men in Europe. Our annual business returns are greater than those of any other country, our methods of doing business are ahead of those in the most advanced communities outside of this country, our aggressiveness and marshalling powers are unexcelled. It is consequently only natural that there is a keen desire among students of finance to learn the secrets of our business successes and to follow the histories of many of our great financial operations. But students of finance who visit our country from foreign lands with a view of familiarizing themselves with our financial methods experience great difficulties in gaining the knowledge desired.

There is a surprisingly small amount of literature dedicated to our economic and financial history. Our great economic leaders have almost invariably been practical men devoid of the powers and arts of expression, who have been satisfied with the accumulation of wealth and have not even attempted to enlighten their fellow-men as to their experiences, practices, and successes in wealth making. Nothing is farther from the thoughts of men like the Rockefellers, Morgan, Ryan and other financial leaders of the day than authorship. So when a Carnegie accidently presents us with a book of his own compilation, even though it deals in general terms with wealth-getting we have to be thankful for the gift. Among the more prominent of the men of business, who, while not great captains of industry like some of those named above, have endeavored to throw light on contemporary financial affairs and problems, we are perhaps most indebted to Henry Clews. Mr. Clews is a prominent banker and broker who has grown up with the New York Stock Exchange. He has been associated with all the leading financial magnates of this country during the past fifty years and has recorded his observations in three important volumes. His "Fifty Years of Wall Street" is the most complete compendium of corporation financial history during the period it deals with that has been published. It is a source book that no student of our financial history can overlook. His "Wall Street Point of View" was designed to correct public opinion regarding American banking problems from the erroneous impressions gained by the perusal of the flood of muck-raking articles that have deluged the press in recent years.

Mr. Clews has collected forty-two essays and addresses on financial, social, political, and economic topics in his latest publication entitled "Financial, Economic and Miscellaneous Speeches and Essays." This work covers, naturally, a broader ground than his previous publications. But this broadening of the scope adds to its value. It makes a wider appeal to readers. The majority of chapters deal with financial topics, but many deal with current political and social problems from the Wall Street

point of view. Mr. Clews is always an advocate of high ideals in citizenship, business life and politics. He again and again refers to the fact that there can be no national advancement in material prosperity unless the people generally, and business men in particular, cultivate to the utmost all those qualities of righteousness exhibited by the highest types of our race. In his essay on National Ideals he happily says: "We want this country to be worthy of the toast Ben Franklin proposed in the height of his great career. At a banquet, the English Minister offered the following: 'Here's to England, the sun which lights the universe.' The French Minister followed with 'Here's to France, the moon which reflects the light of the sun.' Franklin arose and calmly said, 'Here's to America, the Joshua who commanded the sun and the moon to stand still, and they obeyed him.' Now we want our countrymen so to live that we may be worthy to command the other countries to stand for right and justice, and to have them obey. We do not desire to enforce our command by war, but by such an example of right living and good government that our advice will be more powerful than a command."

In a work dealing with such controversial topics as "Individualism Versus Socialism," "The Wage Earner and Capital," "The Monetary Situation and Its Remedy" and "Corporation Problems," there are opportunities for differences in opinion.

For example: Mr. Clews takes an emphatically conservative position when dealing with such a timely topic as "Woman in Politics, Nature, History, Business, and the Home." He says with much warmth when speaking of suffragettes: "As we all know, and as we all fully appreciate, womanliness in woman and manliness in man are natural, and admired by all nations. A reversal of these characteristics is abnormal, and excites opposite sentiments, because what is unnatural is, in varying degrees, repulsive and unbecoming.

"So we should encourage and respect and honor womanliness in woman and manliness in man, and deprecate whatever tends to the opposite in either. In looking at both sexes, we should first study the place of each in nature. As man and woman were created to perform separate and distinct functions in life, they have their essential points of difference.

"Nature inflexibly maintains these points of difference, the most obvious of which is motherhood, and kindred physiological conditions, in woman, and opposite physiological conditions, coupled with superior average size, strength and endurance in man. The creation of the world, as described in the book of Genesis, was followed by the creation of Adam, and then we are told from one of the ribs of Adam Eve was created, and given to Adam as his helpmate.

"The Bible does not support, or in any way uphold, the equality of man or woman, for their creation was dissimilar in material respects—that is, the manner of their creation was different; the physical functions for which each is designed are dissimilar. The differences show they are unequal.

"She was content, in the olden times, to occupy and confine herself to her own sphere, without any apparent desire to encroach upon man's or

to share his special privilege of voting at the polls, and filling official and business positions that had always been held by the sterner sex. But mark the tremendous development and transformation in this modern age of almost miraculous progress that have converted the woman of the past into a being that we never knew before, a being who has worked her way out of the home into all the professions, and many, if not nearly all, of the industrial occupations formerly monopolized by men.

"In doing this she has, incidentally and unconsciously, elbowed many men out of their usual employment, and caused a reduction in the incomes of many more, through competing with them at lower wages.

"But not content with her amazing success in business, and leaving home every morning to work all day in office, store or factory to the destruction of much of her domestic life, she wants to enter politics and asks for votes.

"She does not shrink from the prospect of going through any ordeal that politics might impose upon her, if she succeeded in obtaining the suffrage. The coarseness, vulgarity, bad company, mud-slings, ballot frauds and malodorous crowds at political gatherings, and other unpleasant adjuncts of political life, have no terrors for her. She wants them all in her eagerness for the right to vote.

"The more that even politicians of the sterner sex, in or out of office, know of politics, the more they are, very generally, disgusted, and this would doubtless be still more the case with women. So politics would disappoint them, and, as women feel and take to heart disappointments more keenly than men, they would have all the more reason to regret that they had ever entered the political arena.

"The suffragettes, and those of both sexes who are in passive or active sympathy with them, are greatly mistaken, in my opinion, as to any probable or even possible good that women would accomplish, or derive from the right to vote, even if they secured it. They imagine they could do much. They would find that they could do but little.

"Yet the English suffragettes have suffered ridicule, persecution, imprisonment, starvation, and forced feeding by the stomach pump, in their battle for the suffrage.

"The idea that woman could purify politics by her vote, and make politics less corrupt, or government better than man has made it, is utterly illusory.

"Women in politics would be no better than men. They are one as to flesh and blood, and would be influenced by the same emotions, desires, motives, and objects as men, and most of them, perhaps nearly all, would be led, directly or indirectly by men.

"It is natural for women to be more influenced by men than men are by women, in all business matters, and in none more so than the business of politics for it would be a new and strange field of action for a woman to enter. If not led she would be likely to drift aimlessly with the tide. She would be a novice at the game.

"This prospect, however, does not make the suffragette less earnest and determined in her quest for the suffrage. She has made Political

Equality the goal of her ambition and feels prepared to make more or less severe sacrifices for it, thinking she will be amply compensated in the end. This is both a delusion and a snare, for the compensation would be mythical. So her zeal, her enthusiasm, her yearnings, her aspirations, and her efforts are employed in a cause that would prove useless to herself and fruitless to the world."

There were two reasons for quoting the above at length: First, the quotation is a good example of the clearness and vigor of the author's style and second, it indicates the stimulating effects the writer's views exercise upon his readers' thoughts.

This work is one of the most interesting published in the Wall Street district in recent times and can be highly recommended to students of finance. It is as instructive as it is interesting.

ARTHUR SELWYN-BROWN.

MODERN ACCOUNTANT. J. A. Lyons & Co., Chicago.

This book is the first in a series of three which compose the latest complete course in bookkeeping published by this firm. The second text of the series is styled "Wholesale Accounting" and the third, "Mercantile Accounting."

The account method is adopted for the presentation of the subject. This is the method used by the leading teachers of bookkeeping and is surely the most logical. The author states in the preface: "Probably the most important thing to be learned in bookkeeping is how to select debits and credits. For this purpose there is no more effective instrument than the Journal. But the Journal, being a mere means to an unseen end, soon becomes tiresome. That the pupil may see the object of journalizing, the form and use of each account is first studied before he is asked to make any entries of it in the Journal. In other words, first the account is studied, then the Journal as it effects that account is considered."

Simple accounts are illustrated with proper red ink ruling and closing entries. Unfortunately, however, some of these accounts are shown in ordinary type and some in script. Following each account is a set of questions and examples for practice, and a set of transactions to be journalized is introduced after every two accounts.

In the second section a simple set of transactions to be journalized is given. The first half of these are illustrated. At the close, explicit directions are given for posting and taking a trial balance.

A partial trial balance is given at the close of the second set and then instructions for closing the ledger. Accounts are classified into "Real" and "Representative" and a "Statement" giving the condition of the business is also made at this point.

After the student has mastered the journal, other books of original entry are introduced, exercises on the classification of Merchandise Account are given, and the concluding sets represent the Boot and Shoe Jobbing Business, and the Retail Grocery Business. The last set may be written up by either Double or Single Entry. F. A. T.

Legal Department

EDITED BY CHARLES W. GERSTENBERG, Ph.B., LL.B.

The Legal Department of THE JOURNAL OF ACCOUNTANCY is prepared to render a genuine service to its subscribers and readers, by undertaking to answer legal questions submitted to it. These questions, while they may be suggested by the problems that arise in the practice of our correspondents or by the more theoretical requirements of examination boards, should always be so stated as to call for single propositions of law. Whenever the Department receives a query the correct answer to which may vary with many possible but unstated circumstances the correspondents will be asked to give the details or advised to consult local counsel. Reasonably prompt replies by the Department will be made by personal communication or through the columns of THE JOURNAL. Address all communications to THE JOURNAL OF ACCOUNTANCY, Legal Department, 32 Waverly Place, New York City.

NEW YORK PRIVATE BANKING LAW CONSTITUTIONAL

Since the issue of the December number of THE JOURNAL OF ACCOUNTANCY which reviewed the decision handed down by Mr. Justice Bijur, sitting in Part I, Special Term, Supreme Court, New York County, declaring the New York Banking Law, Chapter 348, Laws 1910, to be unconstitutional, the same question has been brought before the United States Supreme Court on appeal from the United States Circuit Court, Southern Division. The decision of the lower court was reversed. See *N. Y. Law Journal*, January 18, 1911.

CHAPTER 348, LAWS 1910 (NEW YORK), NOT UNCONSTITUTIONAL

Requirement of License for Persons Engaged in Business of Receiving Deposits for Safekeeping or Transmission

SUPREME COURT OF THE UNITED STATES

January 3, 1911.

MORRIS ENGEL, appellant, v. EDWARD R. O'MALLEY, FRANK MOSS, CLARK WILLIAMS and WILLIAM F. BAKER.

Chapter 348 of the Laws of 1910, which forbids individuals or partnerships to engage in the business of receiving deposits of money for safekeeping or for the purpose of transmission to another, or for any other purpose, without a license from the comptroller, the deposit of money or securities with him and the filing of a bond conditioned for the faithful performance of the duties undertaken, does not contravene the Constitution of the United States.

The State may regulate the business of one who receives deposits, and for the protection of depositors against fraud may take strong measures to render them secure.

The fact that discretion was given to the comptroller to grant or refuse a license does not affect the validity of the legislation.

Neither does the act contain an unconstitutional discrimination by excepting from its application certain classes, especially those in whose business the average amount of each sum received is not less than $500 and those who give a bond for $100,000.

Legislation which regulates business may well make distinctions depend upon the degree of evil.

The act does not violate the commerce clause, since it relates to the receiving of deposits and not to the transmission to other States of the identical objects received on deposit.

Appeal from the Circuit Court of the United States for the Southern District of New York.

Charles Dushkind for appellant; Louis Marshall for appellee.

Mr. Justice Holmes delivered the opinion of the court.

This is a bill in equity to prevent the carrying out of chapter 348 of the Laws of New York for 1910, which forbids individuals or partnerships to engage in the business of receiving deposits of money for safekeeping or for the purpose of transmission to another, or for any other purpose, without a license from the comptroller. The requirements for obtaining the license, so far as they affect the plaintiff, are that the applicant shall deposit $10,000 with the comptroller and present a bond with a penalty of not more than $50,000 or less than $10,000, to be fixed by the comptroller, conditioned upon the faithful performance of the duties undertaken. After notice shall have been posted for two weeks the comptroller may approve or disapprove the application in his discretion, and licensees are to pay a fee of $50 (section 25). The license is revocable at all times by the comptroller for cause shown (section 26). Carrying on the business specified, or using the word "banking" or "banker" on signs, letterheads or advertisements in connection with any business, without a license is made a misdemeanor (section 27). The foregoing provisions do not apply to any corporation or "individual banker" authorized to do business under the Banking Law, or to national banks; to any hotelkeeper who shall receive money for safekeeping from a guest; to any express or telegraph company receiving money for transmission; to individuals or partnerships where the average amount of each sum received on deposit or for transmission in the ordinary course of business shall have been not less than $500 during the fiscal year preceding an affidavit to that effect; or, finally, to any individual or partnership filing a bond approved by the comptroller for $100,000 when the business is in a city having a million inhabitants, or, if elsewhere, for $50,000, or money or securities that the comptroller approves (section 29d).

The plaintiff alleges that he is a citizen of the United States and has been engaged in the business specified in the statute for twenty years; that by good reputation and considerable expenditure he has made his business of great value, and that it chiefly consists in receiving deposits in very small sums from time to time until they reach an amount sufficient to be sent to other States and mainly to foreign countries. The plaintiff further alleges that he has not the means that would enable him to make the deposit and give the bond required, and that the enforcement of the law against him will compel him to close. He avers that the statute is unconstitutional as against him under the Fourteenth Amendment and under the commerce clause of the Constitution of the United States (art. 1, sec. 8). The bill was demurred to and the demurrer was sustained by the Circuit Court.

The first objection urged by the plaintiff in argument is to a requirement that we have not mentioned, that the applicant must have been continuously for five years immediately preceding his application a resident of the United States. As the plaintiff alleges that he satisfies this requirement he has nothing to complain of. And, therefore, without intimating any doubt as to the validity of the clause we pass at once to the matters in which he is concerned (Southern Pac. R'y v. King, 217 U. S., 524, 534). As a preliminary to his argument the plaintiff denies that he is in any sense a banker, and even goes so far as to treat the receipt of money for safekeeping or transmission within the meaning of the act as a case of bailment in which the very coins received must be returned or sent on. Of course this is not a true construction of the statute, as is sufficiently indicated by the title "Private Banking." The receipt of money by a bank, although it only creates a debt, is in a popular sense the receipt of money for safekeeping, since the depositor can draw it out again at such time and in such sums as he chooses. It is safe to assume that the transmission of money contemplated very generally is accomplished by a draft, and practically never by sending on the identical currency received. One form at least of the business aimed at, and, on the face of the bill, that carried on by the plaintiff, is a branch of the banking business. Furthermore, it is a business largely done with poor and ignorant immigrants, especially on their first arrival here.

We presume that the money deposited with the plaintiff is not drawn upon by checks, so that a part of the argument in Noble State Bank v. Haskell, just decided, may not apply. On the other hand, experience has shown that the protection of such depositors against fraud—which is the purpose running through the statute—is especially needed by at least that class of them with whom the persons hit by the statute largely deal. The case cited establishes that the State may regulate that business and may take strong measures to render it secure. It also establishes that the plaintiff has no such constitutional right to carry it on at will as to raise him above State laws not manifestly unfit to accomplish the supposed end, greatly in excess of the need, or arbitrary and capricious indiscrimination. The quasi-paternal relations shown in argument and by documents to exist between those following the plaintiff's calling and newly arrived immigrants justifies a supervision more paternal than is needed in ordinary affairs. Whether the court thinks them wise or not, such laws are within the scope of the discretion which belongs to Legislatures and which it is usual for them to exert.

This appeal seems to have been taken upon the notion that the plaintiff had a business which, under the Fourteenth Amendment, the State could not touch. But, although cut off from that broad proposition, his counsel presents other more specific objections to the act with earnestness and force. It is said that even if the plaintiff could furnish the money and bond required the comptroller might refuse a license upon his arbitrary whim. No guides are given in section 25 for the discretion that he is to exercise, and a provision in section 29e that nothing in the article shall be construed to require the comptroller to make any inquiry as to the

solvency of any applicant is thought to exclude solvency as the test and to leave the matter at sea. We do not so understand the purpose and purport of section 29e, and should suppose that the discretion to be exercised in the refusal to grant the license under section 25 was similar to that exercised under section 26 in revoking one, and that in each case the comptroller was expected to act for cause. But the nature and extent of the remedy, if any, for a breach of duty on his part we think it unnecessary to consider, for the power of the State to make the pursuit of a calling dependent upon obtaining a license is well established, where safety seems to require it, and what we have said before sufficiently indicates that this calling is one to which the requirement may be attached (see Gundling v. Chicago, 177 U. S., 183; Lieberman v. Van de Carr, 100 U. S. 552).

Again, it is argued that the statute makes unconstitutional discriminations by excepting the classes mentioned in section 29d above, especially those in whose business the average amount of each sum received is not less than $500 and those who give a bond of $100,000 or $50,000. But the former of these exceptions has the manifest purpose to confine the law as nearly as may be to the class thought by the Legislature to need protection, and the latter merely substitutes a different form of security, as it well may. "Legislation which regulates business may well make distinctions depend upon the degree of evil" (Heath & Milligan Mfg. Co. v. Worst, 207 U. S., 338, 355, 356). It is true, no doubt, that where size is not an index to an admitted evil the law cannot discriminate between the great and small. But in this case size is an index. Where the average amount of each sum received is not less than $500 we know that we have not before us the class of ignorant and helpless depositors, largely foreign, whom the law seeks to protect (see Musco v. United Surety Co., 196 N. Y., 459, 465; McLean v. Arkansas, 211 U. S., 539, 551).

We come to the final objection, that this statute is an attempt to regulate commerce with other States. When, as in this matter, the constitution takes from the States only a portion of their otherwise absolute control, there may be expected difficulties in drawing the dividing line, because where it shall be put is a question, more or less. The trouble is inherent in the situation, but it is the same in kind that meets us everywhere else in the law. The question is whether the State law creates a direct burden upon what it is for Congress to control, and the facts of the specific case must be weighed. In doing so we recur to what we have said above, that we cannot regard the statement of the plaintiff's business in his bill as describing the receipt of bailments for the transmission of the identical objects received to other States. Neither do we regard the law as having had such bailments primarily in mind. Under the statement in the bill and the words of the law, we must take it that the money received, even when received for transmission, becomes the money of the depositary and his obligation that of a debtor under contract to pay as may be directed. Presumably the depositor retains the right to call for his money himself or to change any direction that may have been given until the money has left the "private banker's" hands.

The law, as was said of a similar one by the New York Court of Appeals, was passed for the purpose of regulating and safeguarding the business of receiving deposits, which precedes and is not to be confounded with the later transmission of money, although leading to it (Musco v. United Surety Co., 196 N. Y., 459, 466, 467). The fact that it is very likely to lead to it does not change the result (Diamond Glue Co. v. United States Glue Co., 187 U. S., 611, 616). The case is similar in principle to Ware & Leland v. Mobile County (209 U. S., 405), where the nearest cases on the other side are distinguished. See further Williams v. Fears (179 U. S., 270). We are of opinion that the commerce clause of the constitution is not infringed, and on the whole case that the decree of the Circuit Court was right. Decree affirmed.

FRANCHISE TAX

In a recent issue of the *New York Law Journal* appears an article by a member of the New York Bar on the subject of the Franchise Tax which because of its wide interest and the great amount of litigation involved is reprinted below in full.

Editor of the New York Law Journal:

SIR—The distinction between capital "invested" and capital "employed," laid down by our courts for the purpose of determining the amount of the franchise tax (sec. 182 of the Tax Law), seems reasonable and well founded, but an examination of the cases shows how very difficult it is as yet to ascertain the proper tests to apply in determining the amount of the tax in a specific case, due chiefly to the fragmentary way in which the question has been discussed.

The writer suggests that these are the principal tests to be gathered from the decisions:

1. Is the entire capital (1) used in some venture located entirely within this State, and (2) requiring active management? (People ex rel. Wall & Hanover St. RR. v. Miller, 181 N. Y., 328).

If both these elements are present there can be little question of the efficacy of this test as establishing employment of capital; if, however, the entire capital is invested here but requires no active management, as in the Hydraulic Co. case (30 App. Div., 180, aff'd 157 N. Y., 676), and the Fort George case (179 N. Y., 49), then we have a question on which there is considerable doubt. The writer is of the opinion that the Wall & Hanover case (supra) overruled the Hydraulic Co. and Fort George cases, as the three dissenting judges in that case asserted, and that now, if the entire capital is used in some venture in this State, that is enough to warrant classifying it as "employed," irrespective of any question of active management or passive holding. On principle that seems right. When a corporation is doing with its capital the very thing for which it was organized, by what reasoning can it assert that it is not employing its capital? Can there be a corporation which does business but never employs its capital stock? (People ex rel. Vandervoort R. Co. v. Glynn, 194 N. Y., 387).

2. Is the property or fund sought to be used as the basis for determining the amount of the tax a part of the capital or derived from surplus? (People ex rel. Singer Mfg. Co. v. Wemple, 150 N. Y., 46).

Even if surplus earnings are actively employed, there is no reason why they should be taxed under section 182. As the case cited points out, other methods of taxation reach this surplus, and there is no necessity for straining the words of the statute to include it.

3. Is the business carried on one authorized by the charter or certificate of incorporation? (People ex rel. v. Miller, supra).

This test, it is submitted, helps but little. The franchise tax is not a tax on mere unexercised privilege, but on the exercised privilege of "doing business in this State," and though a corporation were to carry on an *ultra vires* business, there seems no reason why it should not be liable to the tax. People v. Am. B. T. Co. (117 N. Y., 241) is in point: "The material question is whether it has, in fact, done business within the State, and, if so, what was its nature, character and extent, and not whether it possesses the natural or contractual right to carry on such business." The charter or certificate, for this purpose, is no more than a declaration of intention.

4. Is the capital used with profit in view? (People ex rel. Fifth Ave. B. Co. v. Williams, 198 N. Y., 238).

If the business is conducted with this ultimate idea of profit—not whether it is conducted profitably—then, as this recent case points out very clearly, the tax should be imposed. This view would dispose of any argument as to passive holding, such as was made in the Hydraulic Company and Fort George cases, or as to unprofitable transactions, such as prevailed in the Fifth Avenue case in the court below (136 App. Div., 163).

Perhaps there are other tests, but these seem to be the chief ones in determining what Werner, J., describes as "a narrow but troublesome question" (People ex rel. v. Miller, 181 N. Y., 328, 331).

Respectfully,

2 Rector Street, January 7, 1911. F. Granville Munson.

Navy Yard Accounting System

A report recently received by the U. S. Government from the expert accountants who have been engaged for a month past in installing and testing the value of a new system of accounts in the larger navy yards of the country shows that great economy and increased efficiency, with a saving of much time, have resulted from the adoption of the new methods. The bureau officials, for the first time, instead of waiting for many weeks and months to learn how their various appropriations were affected by work done and the exact cost of such work in detail, are now in possession of reports prepared daily showing their exact financial status. The Navy supply fund has been reduced with great benefit; a system of absolute checks on expenditures has been adopted and quarterly trial ledgers have been supplied since July 1, 1910, so that the department itself is in possession of complete knowledge of every item of expenditure and the state of the various appropriations at any given moment. In the past it frequently happened that a responsible bureau officer never knew when he was violating the law prohibiting expenditures in excess of the appropriations because he was in ignorance of the exact cost that was charged.

C. P. A. Question Department

Conducted by LEO GREENDLINGER, M.C.S., C.P.A.

Criticism and exchange of ideas will clear many a doubt and at the same time improve shortcomings. To solve, compare and criticise C. P. A. problems and thereby to aid in bringing about a uniform American standard for C. P. A. examinations, is the object of this department. With the aid of suggestions and criticism from the professional brethren, it can undoubtedly be achieved. Inquiries will be cheerfully answered.

Following are solutions to problems 4 and 6 in Part II, of the Practical Accounting paper, set by the NEW YORK STATE BOARD OF ACCOUNTANCY, at the June, 1910, examination, by Mr. A. W. Vine. (The problems were printed in the August number of the Journal.)

SOLUTION TO PROBLEM 4

THE PATENT SPECIALTY CO.—JOURNAL ENTRIES

July 1, 1907

The Patent Specialty Co., incorporated under the laws of the State of New York, with an authorized capital of One hundred thousand dollars ($100,000), divided into.....shares of the par value of.....dollars ($.....), each.

Date of incorporation.....1907
Date of organization.....July 1, 1907

Subscription,	Dr.	$50,000.00	
To Subscribed Capital Stock,	Cr.		$50,000.00
Cash,	Dr.	5,000.00	
To Subscription,	Cr.		5,000.00

.....shares of the capital Stock subscribed to per subscription list accepted by the directors vide minute no.....for which certificates have been issued, and 10% of amount subscribed, called and paid.

Organization expenses,	Dr.	500.00	
To Cash,	Cr.		500.00

Legal, and other incorporation expenses paid.

August 20, 1907

Patent,	Dr.	50,000.00	
To Vendor,	Cr.		50,000.00

For patent covering novelty purchased by the directors in accordance with the terms of Bill of Sale dated.....and entered on minute book, vide minute no.....

Vendor,	Dr.	50,000.00	
To Subscribed Capital Stock,	Cr.		25,000.00
" Cash,	"		2,000.00
" Note Payable,	"		23,000.00

In settlement of amount due him on account of purchase of above patent there have been issued to him.....shares of the capital stock of this company, full paid and non-assessable. Cash to the amount of $2,000 has also been paid him and a note for $23,000 payable in one month from date hereof, and bearing interest at 6% per annum has been executed and delivered.

August 27, 1907

Real Estate,	Dr.	5,000.00	
To Surplus,	Cr.		5,000.00

Value of lot donated by the Village Board of Trade in consideration of agreement to erect and equip a plant at cost of not less than $25,000 which agreement has been executed by the directors and deed delivered.

September 13, 1907

Cash,	Dr.	35,000.00	
To Subscription,	Cr.		35,000.00

In payment of a call of 70% of amount subscribed made by the directors vide minute no.....

September 20, 1907

Note Payable,	Dr.	23,000.00	
Interest on Note,	"	115.00	
To Cash,	Cr.		23,115.00

In payment of Note issued August 20, 1907, with interest at 6% per annum.

December 31, 1907

Plant Construction,	Dr.	26,250.00	
To Contractors,	Cr.		26,250.00

For 70% of contract price, $35,000, of plant and equipment to be erected, which proportion is complete.

Cash,	Dr.	2,725.00	
Royalties accrued,	"	190.00	
To Royalties,	Cr.		2,915.00

Royalties received and accrued.

Contractors,	Dr.	14,000.00	
Sundry expenses,	"	2,250.00	
To Cash,	Cr.		16,250.00

Payments to contractors, and for salaries, interest, and insurance, etc.

Sundry expenses,	Dr.	250.00	
To Accrued Expenses,	Cr.		250.00

Salaries, interest, insurance, etc., accrued but not paid.			
Patent,	Dr.	115.00	
To Interest on Note,	Cr.		115.00
Interest paid on note dated August 20, 1907, added to purchase price.			
Royalties,	Dr.	2,915.00	
To Patent,	Cr.		2,915.00
Royalties accrued on Patent purchased deducted from purchase price.			
Organization expenses,	Dr.	2,500.00	
To Sundry Expenses,	Cr.		2,500.00
Interest, insurance, salaries, etc., incurred to date.			

THE PATENT SPECIALTY CO.—BALANCE SHEET, DECEMBER 31, 1907

ASSETS

Real Estate		$5,000.00
Plant Construction, value of work completed (75% of contract price)		26,250.00
Patent		47,200.00
Organization Expenses		3,000.00
Cash on hand and in bank		860.00
Royalties accrued		190.00
		$82,500.00

LIABILITIES

Sundry accrued expenses, salaries, insurance, etc.		$250.00
Contractors, amount due them		12,250.00
		$12,500.00
Capital Stock, authorized	$100,000.00	
Less Stock unissued	25,000.00	
Subscribed Capital	75,000.00	
Less amount uncalled	10,000.00	
Outstanding Stock		65,000.00
Surplus		5,000.00
		$82,500.00

SOLUTION TO PROBLEM 6

THE RICHARDSON ENGRAVING CO.—JOURNAL ENTRIES TO CLOSE BOOKS SEPTEMBER 30, 1908

Insurance Adjustment,	Dr.	$30,000.00	
To Plant,	Cr.		$30,000.00
Book value of plant destroyed by fire September 23, 1908.			
Cash,	Dr.	18,320.00	
To Accounts Receivable,	Cr.		18,320.00

Amount collected from debtors on general book accounts			
Accounts Payable,	Dr.	12,590.00	
To Cash,	Cr.		12,590.00
Settlements made with creditors on general book accounts			
Reserve for bad debts,	Dr.	1,250.00	
To Accounts Receivable,	Cr.		1,250.00
Transfer of amount reserved to offset loss on realization.			
Realization and Liquidation account,	Dr.	1,920.00	
To Accounts Receivable,	Cr.		70.00
Net loss on realization of accounts.			
To Cash,	"		1,850.00
Expense of liquidation.			
Engraving,	Dr.	77,600.00	
Printing,	"	99,350.00	
September Sales not allocated,	"	23,175.00	
To Profit and Loss Account,	Cr.		200,125.00
To transfer sources of income.			
Profit and Loss Account,	Dr.	204,280.00	
To Stock on hand, June 1, 1908,	Cr.		8,750.00
" Power,	"		57,800.00
" Wages,	"		130,180.00
" Rent,	"		1,800.00
" Salaries,	"		5,750.00
To transfer expense of the business.			
Profit and Loss Acct.,	Dr.	3,920.00	
To Insurance Adjustment,	Cr.		2,000.00
" Realization and Liquidation Account,	Cr.		1,920.00
To transfer additional losses and expenses.			
Profit and Loss Surplus,	Dr.	855.00	
To Profit and Loss Acct.,	Cr.		855.00
To transfer balance of undivided profits.			
Capital Stock,	Dr.	50,000.00	
To Wm. Richardson,	Cr.		10,000.00
" Silas Johnson,	"		15,000.00
" Thomas Acton,	"		25,000.00
For — shares of the Capital Stock of this company held by them and now returned for cancellation.			
Wm. Richardson,	Dr.	1,444.00	
Silas Johnson,	"	2,166.00	
Thomas Acton,	"	3,610.00	
To Profit and Loss Acct.,	Cr.		7,220.00
For divisions of net loss in proportion to their holdings.			

Wm. Richardson,	Dr.	1,556.00	
Silas Johnson,	"	2,334.00	
Thomas Acton,	"	3,890.00	
To Cash,	Cr.		7,780.00

Final distribution of cash.

THE RICHARDSON ENGRAVING AND PRINTING CO.—PROFIT AND LOSS ACCOUNT SEPTEMBER 1 TO 23, 1908

Gross Earnings, June 1 to September 23, 1908.		
Engraving	$77,600.00	
Printing	99,350.00	
September Sales, not allocated	23,175.00	$200,125.00
Deduct expenses of operating:		
Inventory June 1, 1908	8,750.00	
Wages	130,180.00	
Power	57,800.00	
Rent	1,800.00	
Salaries	5,750.00	204,280.00
Loss on operating		$4,155.00
Add loss on fire adjustment:		
Book value of plant destroyed	$30,000.00	
Insurance received	28,000.00	2,000.00
Add loss and expense of liquidation:		
Book value of accounts receivable	$19,640.00	
Less reserve for bad accounts	1,250.00	
	$18,390.00	
Less amount realized	18,320.00	
Loss on realization	$70.00	
Expense of realization	1,850.00	1,920.00
		$8,075.00
Deduct Profit and Loss Surplus		855.00
		$7,220.00
Divided as follows:		
Wm. Richardson, one-fifth	$1,444.00	
Silas Johnson, three-tenths	2,166.00	
Thomas Acton, one-half	3,610.00	$7,220.00

COMMENTS

In solving problem 4, Mr. Vine regards the royalties accrued as a reduction on the purchase price. The question reads: "The patent was subject to royalty rights granted to the Novelty Company, which terminated at date of purchase. All accrued royalties were to pass with patent and no royalty rights were granted by the Patent Specialty Company." The royalties mentioned in the problem as having been received and accrued to December 31, 1907, must have been those which were accrued on August 20, 1907, and therefore form a reduction on the purchase price.

It is rather questionable whether the complementary credit to real estate donated should be "surplus." This company has done no business as yet and therefore has no profits for distribution as dividend, which is possible by means of the credit balance that is shown to surplus. A better method, perhaps, would be to credit it to a "reserve" account, properly ear-marked.

There is no account except "Organization Expenses" to which the insurance, salaries, etc., could have been charged. As there are no operations as yet, all the expenses incurred are for the purposes of organization; therefore a charge to this account is proper.

NOTES BY MR. VINE ON SOLUTION TO PROBLEM 6

Although $7,000 has been received from the Insurance Company for the stock in hand at the time of the fire it has not been credited to Insurance Adjustment account. It is assumed that same was credited to Sept. sales not allocated.

The question states that cash was received from September sales amounting to $13,500. Allowing $7,000, as above, there remains a balance of $2,675 to be debited to some account. This might have been debited to Reserve for bad debts, but as the balance to credit of the account is equal to over 6% of the accounts receivable outstanding it is hardly likely that this could have been done. It may have been written off the Profit and Loss Surplus, but this course would have been unusual. It is therefore assumed that the situation was as follows: September sales records have been destroyed, yet there is a figure in the trial balance under this heading. It is therefore most likely that the method of the Richardson Engraving Company was to debit the customer at the time the charge was incurred and to credit the appropriate revenue account at the end of each month. The balance of accounts receivable would thus include the amounts unpaid for September sales as well as all other unpaid terms. This is further borne out by the fact that the allocated sales were $176,950 and unallocated sales $23,175, while the outstandings from customers amount to $19,640 consisting of $16,965 on allocated sales, and $2,675 on unallocated sales or about 9 and 11% respectively. As the unallocated sales are of more recent occurrence it seems reasonable to assume that these percentages are accurate and support the supposed methods.

It will be noticed that the credit side of the trial balance given adds $293,820 not $292,820. Candidates were instructed to reduce one of the credit items by $1,000 and I have therefore reduced the unallocated September sales by this amount.

For the benefit of our readers, who are desirous to find out what kind of problems are set at the most recent examinations we print the questions in Practical Accounting, set at the recent New York C. P. A. examination. Comments on the make up, etc., will follow in some later issue.

30TH ACCOUNTANT EXAMINATION

PRACTICAL ACCOUNTING—PART I

Tuesday, January 31, 1911—1:15 to 4:15 P.M., only

Answer two questions but NO MORE.

1. The American Manufacturing Company, on January 1, 1909, placed in service a piece of machinery which would depreciate, according to its chief engineer, at the rate of 15% per annum. The original cost of this machinery was $84,000 and the board of directors agree to set aside annually a sinking fund which, together with the interest thereon, will amount to the original cost at the end of the prospective life of the machinery. This sinking fund is to be deposited with a trust company on December 31 of each year and a corresponding amount at the end of the last partial year of the life of the machinery; interest is to be credited by the trust company at each of these dates at the rate of 4% per annum. Show how the amount of the annual sinking fund payment may be arrived at and prepare a detailed statement for the board of directors, proving that the amount so obtained is correct.

2. The Sinclair Trading Company has been granted permission to dissolve its corporate existence. You are consulted about the procedure of closing its books and are given the following information:

An abstract of the ledger, on July 15, 1910, discloses: land and building, $30,000; plant and machinery, $50,000; merchandise inventory, $22,500; notes receivable, $10,500; accounts receivable, $16,800; contingent fund, $15,200; mortgage bonds (on machinery and plant) $25,000; accrued interest on the mortgage, $52; notes payable, $27,000; accounts payable, $28,000; capital stock (authorized, issued and outstanding) $50,000; reserve for depreciation of plant and machinery, $9,500; reserve for depreciation of buildings, $1,950; reserve for contingencies, $15,200; surplus, $798.

There is a balance in the bank of $12,500.

A report rendered by the secretary of the company shows the result of the realization as follows:

The mortgagees bought the plant and machinery for $35,000, paying cash for the difference between the amount of the mortgage and the accrued interest, and the purchase price. The land and buildings were sold for $33,000. The inventory of merchandise was disposed of for $20,000. The notes receivable were paid; the accounts receivable realized $15,150 and the securities of the contingent fund realized $14,700.

All notes payable and accounts payable were paid and the expense of realization and liquidation amounted to $3,200.

Prepare (*a*) all closing entries for the dissolution of the company, (*b*) a statement of realization and liquidation showing the amounts distributed to the stockholders.

3. A corporation's inventory on Jan. 2, 1909 was:

Raw materials	$32,467.18
Goods in process	4,212.22
Plant	18,673.18
Made up goods	19,753.47

The corporation suffered a fire loss on May 1, 1909; the interim transactions affecting merchandising, manufacturing and plant were as follows:

Purchases raw materials	$46,375.22
Productive labor paid out	21,618.06
Manufacturing expenses	5,167.20
Rent of show room and offices	400.00
Selling expenses	7,618.25
Advertising	360.22
General expenses	2,561.12
Sales	95,714.66
Allowances to customers	310.18
Returns of customers	2,167.29
Plant purchases	361.22

The figures ascertained for the years 1906, 1907 and 1908, for the identical items, were as follows:

	1906	1907	1908
Purchases raw materials	$186,320.16	$104,360.22	$157,316.20
Productive labor paid out	90,322.24	61,212.06	72,106.14
Manufacturing expenses	20,163.12	16,208.17	20,216.23
Rent of show room and offices	1,500.00	1,200.00	1,200.00
Advertising	1,000.00	750.00	1,000.00
Selling expenses	28,672.18	16,314.12	22,312.18
General expenses	10,750.16	9,746.22	11,116.20
Sales	386,924.12	217,306.01	321,672.18
Allowances to customers	1,116.24	3,605.75	975.00
Returns of customers	8,614.08	4,106.18	3,167.22
Plant purchases	500.00	540.22	409.00
Inventories beginning of year			
Raw materials	39,223.16	31,316.20	33,416.20
Goods in process	6,104.12	3,107.12	3,726.18
Made up goods	21,223.10	17,306.29	18,622.12
Plant	17,223.96	17,723.96	18,264.18

You are employed by the assurers; all policies concur under the 80% coinsurance clause and the insured claims his loss is 42½% of the prime cost of his goods and value of his machinery at time of the fire; the percentage claim is adjusted at that figure. The amount of insurance in force was as follows: on merchandise stock, $40,000; on plant, $12,500.

Prepare requisite statements showing the value of the assets destroyed.

30TH ACCOUNTANT EXAMINATION

PRACTICAL ACCOUNTING—PART II

Wednesday, February 1, 1911—9:15 A.M. to 12:15 P.M., only

Answer two questions but NO MORE.

4. The A Manufacturing Company incorporated under the laws of the State of New York, with a capital of $100,000 consisting of 1,000 shares of $100 each, all of which has been paid in cash, presents the following balance sheet as of May 31, 1909:

ASSETS

Cash	$125,000.00
Materials and supplies	25,000.00
Accounts receivable	300,000.00
Plant and buildings	400,000.00
	$850,000.00

LIABILITIES

Accounts payable	$20,000.00
Capital	100,000.00
Surplus	730,000.00
	$850,000.00

Annual sales, $800,000.

The B Manufacturing Company incorporated under the laws of the State of New York, with a capital of $1,000,000 consisting of 10,000 shares of $100 each, presents the following balance sheet as of May 31, 1909:

ASSETS

Cash	$50,000.00
Materials and Supplies	25,000.00
Accounts receivable	200,000.00
Plant	500,000.00
Goodwill	700,000.00
	$1,475,000.00

LIABILITIES

Accounts payable	$150,000.00
Capital	1,000,000.00
Surplus	325,000.00
	$1,475,000.00

Annual sales, $600,000.

Both concerns are engaged in the manufacture of the same commodity and desire to consolidate for the purpose of maintaining prices, but will continue to operate each plant separately. They organize the United Manufacturing Company with a capital stock of $200,000 consisting of 2,000 shares of $100 each, the members of the A Company agreeing to subscribe for 1,000 shares and to pay for them in cash and the members of the B Company for 1,000 shares also payable in cash; the stock is issued to the following:

Comprising the A Company:

C—Certificate 1 for 250 shares
D— " 2 " 250 "
E— " 3 " 250 "
F— " 4 " 250 "

Comprising the B Company:

G—Certificate 5 for 250 shares
H— " 6 " 250 "
I— " 7 " 250 "
J— " 8 " 250 "

The cash is paid into the treasury of the United Manufacturing Company on the issuance of certificates to the respective subscribers.

The United Manufacturing Company purchases and pays cash for the stock of materials and supplies of both mills.

The United Manufacturing Company rents from the A Company its plant and agrees to pay an annual rental of $90,000 and in addition thereto will pay the officers managing the A plant an annual salary of $90,000 for their services. The rent for the B Company plant is agreed on at $60,000 and the officers are to receive an annual salary of $60,000. It is agreed that all additions to the plants and all repairs and maintenance are to be paid for by the United Manufacturing Company.

Operations of both plants are continued and at the end of the fiscal year May 31, 1910 the balances appearing on the books of the United Manufacturing Company are as follows:

Cash	$200,000.00
Accounts receivable	200,000.00
Additions to plant	60,000.00
Accounts payable	160,000.00
Capital stock	200,000.00

The trading transactions of the respective mills are as follows:

A COMPANY'S MILL

Purchases—raw materials and supplies	$160,000.00
Labor	300,000.00
Factory expense	100,000.00
Repair and maintenance of plant	80,000.00
Office expense	60,000.00
Rent of plant	90,000.00
Officers' salaries	90,000.00
Sales	907,000.00

B COMPANY'S MILL

Purchases—raw materials and supplies	$140,000.00
Labor	250,000.00
Factory expense	75,000.00
Repair and maintenance of plant	70,000.00
Office expense	50,000.00
Rent of plant	60,000.00
Officers' salaries	60,000.00
Sales	778,000.00

The stock as of May 31, 1910, consisted of

Materials and supplies—A Company's mill	$10,000.00
Materials and supplies—B Company's mill	15,000.00
Labor due, not paid—A Company's mill	5,000.00
Labor due, not paid—B Company's mill	10,000.00

Open the books of the United Manufacturing Company; prepare balance sheet as of May 31, 1910 and consolidated trading and profit and loss account showing profits for each mill. As the mills have been kept in perfect repair no depreciation is to be considered; outstanding accounts are considered good. Provide for a dividend of 10%.

Prepare percentage table of each mill, showing to four (4) decimals the percentage of *each* of the following items against the total cost of production:

Materials and supplies.
Labor.
Factory expense.
Repairs and maintenance.
Rent of plant.

5. From the following trial balance of Johnson & Thompson, Incorporated, as of June 30, 1910, the end of their fiscal year, prepare a manufacturing and profit and loss account and financial statement:

Cash on hand		$75.00	
Cash in bank		3,750.00	
Inventory July 1, 1909			
Raw material		35,480.00	
Finished goods		9,760.00	
Sales			$540,000.00
Return sales		8,463.00	
Freight and express outward		935.00	
Purchases		195,670.00	
Accounts payable			37,600.00
Bills payable			8,500.00
Accounts receivable		45,920.00	
Bills receivable		1,925.00	
Wages		232,927.00	
Fuel		11,270.00	
Factory supplies		3,648.00	
Cash discount on purchases			4,763.00
Freight and express inward		7,433.00	
Land		27,000.00	
Buildings		18,000.00	
Machinery and Tools		80,000.00	
Maintenance and replacement of machinery and tools	$10,580.00		
Less amount received from old machinery and tools	6,750.00	3,830.00	
Mortgages payable, 6% interest paid to May 1, 1910			17,000.00
Reserve for bad and doubtful accounts			1,280.00
Suspense account			
Worthless accounts receivable		679.00	
Patent rights—disbursements		320.00	
Depreciation—buildings machinery and tools			4,900.00
Advertising		670.00	
Traveling expenses		3,700.00	
Office expenses		5,300.00	

Salaries of officers	12,300.00	
Dividends	12,500.00	
Interest	700.00	
Discount on sales	2,760.00	
Capital stock		100,000.00
Surplus		8,972.00
	$723,015.00	$723,015.00
Inventory June 30, 1910:		
Raw material	$27,698.00	
Partly finished goods	11,590.00	
Fuel	1,200.00	

The reserve for bad and doubtful accounts must equal 2% of the accounts receivable.

Although machinery and tools are maintained and replaced, 5% depreciation must be allowed on them as well as 5% depreciation on buildings.

6. The following is the trial balance of the X. Y. Z. Coal Mining Company, as of December 31, 1908:

TRIAL BALANCE DEC. 31, 1908

Cash	$5,674.50	
Breaker and machinery	145,000.00	
Office building	5,000.00	
Blacksmith shop	4,000.00	
Inside construction	15,675.00	
Car and mine rail account	7,534.50	
Horses and mules	5,600.00	
Accounts receivable	35,112.25	
Bills receivable	10,000.00	
Capital stock—common		$50,000.00
Capital stock—preferred		100,000.00
Coal sales		257,890.00
Accounts payable		12,500.00
Surplus		17,709.35
Depreciation on buildings and mach'ry		12,000.00
Supplies	8,240.00	
Pay roll—outside	24,701.50	
Pay roll—inside	110,434.25	
Salaries—superintendent, etc.	6,000.00	
Salaries—office clerks	4,500.00	
Office expense	1,147.35	
General expense	750.00	
Claims for injuries	4,000.00	
Insurance (expires July 1, 1909)	5,500.00	
Repairs to buildings	4,075.00	
Repairs to construction	3,445.00	
Barn expense	1,500.00	
Selling expense	4,500.00	

Royalty account	30,500.00	
Water	800.00	
Fuel	935.00	
Timber and props	5,475.00	
	$450,099.35	$450,099.35

The total output for the year was 132,300 tons.

An examination of the books and records shows that the following charges had not been entered: horses and mules, $2,200; car and mine rail account, $1,450; claims for injuries, $1,000. During the year the bookkeeper through error charged to inside construction $3,415 instead of to pay roll inside.

The coal is mined on lease that averages 20 cents per ton. The inventory is as follows: timber and props, $1,500; powder, $555; oil, etc., $175. In preparing the above statements allowance for depreciation on buildings and machinery may be considered at the rate of 5%.

Prepare income and profit and loss account and balance sheet, as of the above date, showing gross earnings and net earnings, also the average cost per ton.

C. P. A. Language

The idea still persists in some quarters that professional men are so wrapped up in their own specialty that they know nothing of any other art or science. Witness the following letter to the New York *Sun*, recently published:

TO THE EDITOR OF THE SUN—*Sir:* On looking over the correspondence that you have published under the heading "The American Language" my attention was particularly called to two letters from different correspondents who have added the title "C. P. A." to their names. My understanding of "C. P. A." is "Certified Public Accountant," and it is well known that anyone following that calling is supposed to devote his attention to the figuring and calculating of problems in connection with accounts, etc., and the eliminating of language as far as possible. Now personally I believe in calling a spade a spade, and inasmuch as the English language pretty well covers the various fields of law, literature, science, etc., I would suggest that all the C. P. A.'s in the country get together and invent a numerical language, so to speak. In a business sense we think and deal in numerals; then let's welcome the day when we can speak in a numerical sense. All honor to the calling of "C. P. A.," but its realm is figures not language. E. MACK.

NEW YORK, January 14.

It may be suggested to the correspondent that C. P. A.'s are not confined to the realm of figures. In point of fact they are generally well satisfied with the English language: their concern is to use it discreetly and sparingly—to express themselves simply and accurately. They have little sympathy with the class who "lisp in numbers" and who later clothe their thoughts in figures of speech. There is a C. P. A. language truly, but it is far from being a language of figures; it is a language of concrete facts, a language that he who runs can read.